





POLITECNICO DI TORINO

Master of Science program in  
Architecture Construction City

Master research thesis

**Importance of YouTube in communicating Architecture  
and in engaging users during the covid-19 pandemic.**

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## ABSTRACT

A new virus “covid-19”, belonging to the coronavirus family has been identified at the end of 2019, in the city of Wuhan in China. This new virus is very contagious, it can be transmitted from a person to another in a very easy and fast way. To control and slow the rapid spread of the virus, cities all around the world went under complete lockdown, and flights were canceled as well. Therefore, social media platforms were the only escape for individuals to stay updated and to participate and also for architects and urban planners studying the city under lockdown to find new and appropriate solutions for better and safer cities and buildings. Social media, especially the video contents were the center of life during this pandemic, from here the focus of the study was on the YouTube platform and its importance in communicating urban architecture and in engaging users during this covid-19 pandemic.

This study will be based on the analysis of 30 selected videos from the YouTube platform according to a specific rationale. Those videos will be divided into two categories; the verified channels and the unverified channels where each of them in its turn is divided into 3 subcategories; covid-19 and the city, covid-19 and architecture and virtual reality 360 travel. Each video will be analyzed using the storytelling methodology and its 5 basic elements to present the result of each video. Following this, the study will present a discussion of the results and a comparison with the literature review and the thesis objective.

**Keywords:** Covid-19, Pandemic, YouTube, Video, City, Architecture, Design, Interaction, Participation, Virtual traveling.

## ABSTRACT (ITALIANO)

Un nuovo virus “covid-19”, appartenente alla famiglia dei coronavirus è stato individuato alla fine del 2019, nella città di Wuhan in Cina. Questo nuovo virus è molto contagioso, può essere trasmesso da una persona all'altra in modo molto semplice e veloce. Per controllare e rallentare la rapida diffusione del virus, le città di tutto il mondo sono state completamente bloccate e anche i voli sono stati cancellati. Pertanto, le piattaforme di social media sono state l'unica via di fuga per gli individui per rimanere aggiornati e per partecipare e anche per gli architetti e gli urbanisti che studiano la città bloccata al fine di trovare soluzioni nuove e adeguate per città ed edifici migliori e più sicuri. I social media, in particolare i contenuti video, sono stati il centro della vita durante questa pandemia, da qui il focus dello studio è stato sulla piattaforma YouTube e sulla sua importanza nel comunicare l'architettura urbana e nel coinvolgere gli utenti durante questa pandemia covid-19.

Questo studio si baserà sull'analisi di 30 video selezionati dalla piattaforma YouTube secondo una logica specifica. Quei video saranno divisi in due categorie; i canali verificati e i canali non verificati dove ciascuno di essi è a sua volta suddiviso in 3 sottocategorie; covid-19 e la città, covid-19 e l'architettura e la realtà virtuale 360 viaggiano. Ogni video verrà analizzato utilizzando la metodologia dello storytelling e i suoi 5 elementi di base per presentare il risultato di ogni video. Successivamente, lo studio presenterà una discussione dei risultati e un confronto con la revisione della letteratura e l'obiettivo della tesi.

**Keywords:** Covid-19, Pandemia, YouTube, Video, Città, Architettura, Design, Interazione, Partecipazione, Viaggio virtuale.

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## 1. INTRODUCTION

A new virus “covid-19”, belonging to the coronavirus family has been identified at the end of 2019, in the city of Wuhan in China. This new virus is less dangerous than previous viruses belonging to this family, but it is much more contagious. By the month of April in 2020, the coronavirus covid-19 has reached 206 countries all around the world (Habib,2020). To slow down and control the rapid of the virus, cities in many countries like Italy, China, France, etc went under complete lockdown, and flights were canceled as well.

These measures have transformed the cities, this latter became totally empty because of the lockdown, where people were isolated in their houses, not able to go out, neither to travel where social media platforms were their only escape. From this point, architects and urban planners responsible for the city’s design and safety were under pressure to study the impact of the virus on the cities and to search for new concepts for designing new cities and buildings coping with the new measures and especially the social distancing measure. Because of the lockdown, even architects and urban planners were not allowed to go out, so similar to other citizens, social media platforms became their research platform.

Social media platforms during this pandemic came with many benefits to everyone. Additionally, it was the only way to stay updated on what’s happening around the world. It is important to mention that videos are becoming more catchable than articles, which lead the spotlights to the YouTube platform, the platform of video sharing and participation. Architects were using online platforms to discover the cities under lockdown to find appropriate design solutions and people were using them to participate in topics and to stay updated as well. From here the topic and the objective of this thesis appeared.

The objective of this research is to examine the importance of the YouTube platform in communicating information related to the city for architects, urban planners, and designers and how this platform allows the participation of individuals in each video it presents and sometimes it allows them much more than a simple interaction but also a chance to travel and explore new cities from home while isolated.

The purpose of the study is to explore:

- The importance of YouTube in communicating urban architecture and in engaging users during covid-19 pandemic.

The study adopted the storytelling methodology to collect data from 30 YouTube videos selected based on a set rationale. The videos were selected from different channels, some verified and some unverified channels which helped to divide them into two categories to study each one, focusing on three topics: the city, the architecture, and the virtual traveling during the covid-19 pandemic. The data collected from the analysis will be discussed and compared with the review of literature to make sure that the information presented by YouTube videos is correct and trusted.

In order to reach the goal of the thesis, this study will be answering the following Key Research Questions:

- How does YouTube communicate urban and architectural information during the covid-19 pandemic?
- How does YouTube allow the participation and the interaction of users?
- How does Youtube offer the chance of virtual traveling?

This thesis will begin after the introduction by chapter 2 - the literature review - showing the effects of a pandemic on cities throughout history, and then focusing on today's pandemic with the changes expected in the design for better and safer cities, and it will show the importance of YouTube platform and the video content focusing as well on the participatory culture of this latter. Afterward, chapter 3 - the methodology - presents the methodological approach and the design method or the storytelling method used to conduct this study with the different steps to follow. Following chapter 3, chapter 4 - the results - presents the work done showing the results of the storytelling method applied on each of the chosen video, divided into categories and subcategories. Thereafter, chapter 5 - the discussion - shows the findings presented in each category and their comparison together and with the literature review to answer the thesis objective. To end the study, chapter 6 - the conclusion - offers a conclusive summary of this research study.

## 2. LITERATURE REVIEW

### 2.1. Overview

The literature review refers to the collection of scholarly writings on this topic. This will include peer-reviewed articles, books, news, dissertations, and conference papers. This chapter presents the information that is currently available about the topic considering scholarly writings that fulfill the thesis merit selection criteria.

The literature review will be divided into many parts. It will discuss previous researches related to the topic; starting with the pandemic and the cities throughout history, the covid-19 pandemic, and how it affected the city's life and design especially post covid-19. As well as the importance of social media and the risk communication, with the role of social media in architecture and communication to focus at the end on the YouTube videos, their importance, and the relation between them and the architecture by the concept of participatory culture during and after this pandemic.

### 2.2. Pandemic and cities throughout history

From the beginning of time, pandemics have consistently formed urban areas and cities. Those pandemics have hit and affected the whole world and have ended the lives of millions of people (Routley, 2020), see figure 1.

Name	Time period	Death toll
Antonine Plague	165-180	5M
Japanese smallpox epidemic	735-737	1M
Plague of Justinian	541-542	30-50M
Black Death	1347-1351	200M
New World Smallpox Outbreak	1520 – onwards	56M
Great Plague of London	1665	100,000

Italian plague	1629-1631	1M
Cholera Pandemics 1-6	1817-1923	1M+
Third Plague	1885	12M (China and India)
Yellow Fever	Late 1800s	100,000-150,000 (U.S.)
Russian Flu	1889-1890	1M
Spanish Flu	1918-1919	40-50M
Asian Flu	1957-1958	1.1M
Hong Kong Flu	1968-1970	1M
HIV/AIDS	1981-present	25-35M
Swine Flu	2009-2010	200,000
SARS	2002-2003	770
Ebola	2014-2016	11,000
MERS	2015-Present	850
COVID-19	2019-Present	848K (Johns Hopkins University estimate as of 10:28 am PT, Aug 31, 2020)

*Figure 1. History of deadliest pandemics (Routley, 2020)*

Numerous health problems have not only affected the health and medical fields but they have affected the architecture and urban planning. The more people became cultivated and civilized, creating cities and forging trades to link them together, the more probable pandemics became. Epidemics calls for precautionary measures that affect cities, especially the respiratory epidemics. The measures focus on the importance of isolation, and lockdown of public spaces to slow down the transmission rate. It transforms the picture of urban areas and public spaces into empty areas and spaces. Therefore, after the end of the pandemics, an adjustment in the city's shape is necessary to coordinate between community wellbeing practices and social interaction in the city (Eltarabily and Elghezanwy, 2020). During the different pandemic phases throughout history, starting with the Plague of Athens in 430 BC -the earliest recorded pandemic- to the Black Death pandemic in the 14<sup>th</sup> century in Europe- the deadliest pandemic recorded in history- it is clear that huge impacts affected and transformed the design of cities for a healthier one. Additionally, the quarantine concept was first applied in the 14<sup>th</sup> century from the Black Death plague epidemic, with the origin of this word from the Italian "Quaranta Giorni" which means 40 days (Routley, 2020). The Black

Death pandemic led to a change in urban design in European cities by introducing larger public spaces for a greater connection with green nature and a reduction of the isolation feeling (Malhoney and Nardo, 2016).

In the early 19<sup>th</sup> century, a cholera outbreak occurred with unknown cause, until a London physician named John Snow compared in 1854 two very similar districts in London in social and economic fields. Yet one had a higher number of cholera cases than the other, there was an obvious difference between them, which is the source of water that led to a hypothesis that cholera could be carried in water supply. Many studies followed this and were able at the end to verify the hypothesis and explain that one of the main reasons for cholera outbreak is the mix of potable water with wastewater, which led to their separation (Hays, 2005). Also, Cholera and Yellow fever as well, spurred a massive infrastructural modification in the cities, for example, waste infrastructure construction and changing streets from cobblestones that can hide germs in between, to smooth pavement that can be easily washed (Carr,2020). All of these past events have proved that the diseases played a very important role in improving urban designs and making healthier cities to manage the disease transmission. Yet the concept of urbanization that appeared a lot after the industrial revolution between 1870 and 1914, is very important because cities became full of people, full of residential tall buildings and full of public transportations. These highly dense areas were places for diseases to spread easily. In 1918, the Spanish influenza spread worldwide and killed more people than in the First World War, which slowed down urban growth and limited public life. (Crosby, 2003). Finally, after the previous examples that showed how urban design changes for the better because of pandemics, it is important to always link the pandemic causes with the city's features and the urban design because these latter are home to viruses especially when there is density and lack of sanitation. To prevent pandemics, a careful design of the city in detail should be done, not only for an aesthetic city but also for a healthier and safer city. Therefore, to face the new Covid1-9 pandemic, the world is facing today, changes in urban design are necessary.

### 2.3. Covid-19 pandemic

In the last twenty years, two large-scale pandemics appeared that were caused by coronaviruses, including severe acute respiratory syndrome (SARS) and the Middle East respiratory syndrome (MERS). In December 2019, the first case of a new virus designated as severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) was first reported in Wuhan, China. In January 2020, a novel beta coronavirus was identified and the disease has been named Covid-19. It was declared as a public health emergency of international concern in January 2020, to become a pandemic in March 2020 affecting every country, with more than 2.3 million confirmed cases and more than 160 000 deaths. (Cevik, 2020). The symptoms of this virus can range from mild (or no symptoms) to severe illnesses and sometimes to death. Further data suggested that around 80% of the patients have mild disease, 20% need hospital admission, and almost 5% need intensive care admission (TNCPERE, 2020). Covid-19 as shown in figure 2 is characterized by easy transmission; from close contact between people via droplets, and from human to human, as well from animal to human (Zhao et al., 2020).

<b>SARS-CoV-2</b>	
<b><i>Clinical epidemiology</i></b>	
Affected countries	More than 200
Affected people	More than 800 thousand
Mortality	More than 4%
Mean incubation period	3.0 days <sup>26</sup>
Basic reproduction number	2.2-3.6 <sup>20</sup>
Transmission routes	Droplet transmission; Close contact; Potential fecal-oral routes
Transmission patterns	From animal to human From human to human
<b><i>Possible natural reservoir</i></b>	Bat
<b><i>Possible intermediary host</i></b>	Malayan pangolin
<b><i>Predominant receptor</i></b>	ACE2
<b><i>Receptor distribution</i></b>	Respiratory tract epithelium; gastrointestinal epithelium; renal tubular and testicular cells; pancreatic cells; oral mucosa
<b><i>Principal affected organs</i></b>	Lung and digestive system

Figure 2. Epidemiology and pathogenesis of SARS-CoV-2 (Zhao et al., 2020)

In addition, it was discovered that the genome sequence of SARS-CoV-2 is 96.2% identical to a bat CoV RaTG13 -a SARS-related coronavirus found in bats and is highly similar to the SARS-CoV-2 virus- while it shares 79.5% identity to SARS-CoV. Based on virus genome sequencing results and evolutionary analysis, bat has been considered the natural reservoir of the virus origin, and SARS-CoV-2 might be transferred from bats through an unknown third party to infect humans (Guo et al. 2020). A turning point for this pandemic would be the discovery and the development of an appropriate vaccine that according to WHO, could take 18 months. (Jiang et al. 2020). Meanwhile, to control the novel coronavirus outbreak, the traditional public health measures of quarantine and isolation are the most effective measures because they can effectively reduce the person-to-person contact, thus they can also reduce the number of individuals infected with COVID-19 and delay the peak time (Hou et al. 2020). With the expectation, that public health authorities' recommendation of social distancing and quarantine, could assist with smoothing the infection curve and decreasing complete fatalities from this disease. These measures transformed the cities into empty and closed ones and started the research and studies for new urban design concepts that match the new norms for a safe lifestyle and healthier cities.

## **2.4. Cities Post-Covid-19**

Based on the previous historical pandemics examples, and the current covid-19 pandemic measures, a change in the city design and urban planning is necessary. This change should happen on all levels (city density, street design, public transport, public spaces, parks, housing and building design, and design of workplaces) as all the city's features are directly related to the health of the population, especially during pandemics.

### **2.4.1. Cities Density**

After the industrial revolution, cities became highly populated because of urbanization. Urbanization is a process of population concentration in the cities; in other words, it is a movement -that does not have to be direct or continuous- from states of less concentration

like villages to states of more concentration that we call cities (Tisdale, 1941). Cities have been defined as ways of life, of opportunities, and of becoming which made them highly dense with people, tall residential buildings, public transports... but these highly concentrated areas can be an attraction point of problems and diseases. For instance, in Paris, the populace had expanded from 786 000 in 1831 to reach 1 000 000 in 1846 which took steps to carry social and economic life to a suspension of activities. Adding to that, the devastating cholera epidemics of 1832–35 and 1848–49 had spread in a fast way because of the density of people (Gandy, 1999). In addition, in Taiwan, the H1N1 pandemic in 2009 persisted longer in highly populated areas than in other less populated areas (Kao et al, 2012). By way of explanation, the city's density is a main feature in spreading diseases; dense areas means more face to face interaction and in the case of covid-19, that is spread by direct contact between people, the answer is the rapid spread of the pandemic. The greater the density in the city, the greater the risk of infection. This makes the city and urban design consider this feature to prevent or slow down the spread of pandemics in the future.

Since covid-19 is not the first pandemic, it is important to understand how urban planners acted throughout history to reduce and prevent pandemics. For example, in Paris, during the Cholera pandemic, the solution was to reduce the high population density (Gandy, 1999). Additionally, in the poor neighborhoods where the reduction of the density is not easy, cleaning and widening streets, whitewashing houses, founding hospitals and isolation centers, and constructing sewage systems helped to face the disease (Harning, 2015).

According to the World Health Organization WHO, crowded places and closing places of gathering should be avoided (WHO, 2020). As an answer, governments decided to close restaurants, cafes, shopping centers, universities, schools, and green parks. Some countries were not able to do that for economic reasons like Egypt for example who found an alternative solution by pushing the population from crowded to less dense cities (Eltarabily and Elghezanwy, 2020). Another urban planning solution was discussed; the walkable neighborhood. Covid-19 helped to focus on the “15-minute city” which contains all the facilities needed like shops, school, work, and entertainment that could be reached by walking from home (Foster, 2020). This concept is not new, but it is now being discussed more to prevent the extreme density in one city and to have a healthier life.

## 2.4.2. Streets Design

Being an essential part of the city, streets are also an important feature to fight pandemics and their redesign is necessary to create healthier and more sustainable cities. The covid-19 pandemic caused the change of many things; many things happened faster than usual (Forster, 2020); pedestrianization of streets for example takes years to be realized, while now it happened overnight. Pedestrianization, as the word says it, it is transforming for pedestrians, it is dedicating streets for walking people only, without the passage of any type of vehicles, and this concept is applied during pandemics to have more spaces between people, to achieve the social distancing guidelines, and to have walkable neighborhoods, therefore to have pandemic resilient spaces.

It is important to mention that one of the benefits of the lockdown and the pedestrianization measures during covid-19 is the serious reduction in air pollution due to less automotive traffic. (Venter, 2020). Yet walking and cycling are perfect alternatives for vehicles, and many cities have redesigned their streets temporarily or permanently to cope with these solutions. For example, in Italy, Milan have converted some streets into bicycle and pedestrians path, while some cities in the USA like Houston and San Francisco have applied the Slow Street Program that is designed to limit the vehicles use on some residential streets focusing on pedestrians and bicycles, yet the streets remain open to emergency cases or residents living on these streets (Bereitschaft, 2020), if these changes are not permanent, sidewalks should be widened and bicycle lane should be added. These measures not only provide more spaces for pedestrians and bicycles but they also help to have more sustainable cities: bikeable, walkable, green, and low-carbon city (Foster,2020).

This shows that redesigning streets is as important as fighting pandemics; when streets are redesigned in the right way to cope with the social distancing measures presented by the WHO, they help in achieving many public health and they help in preventing pandemics easier as well as they contribute to have more sustainable cities. These designs do not mean public transportations are not allowed anymore, but this latter has to be subjected to some changes being a part of the city that is always crowded which makes it vulnerable to disease and pandemic transmission.

### **2.4.3. Public transportations**

As discussed before, the density of people during pandemics like covid-19 became a problem and a public health concern, what if this density was in an enclosed space like public transportations? Transportations are essential in every city, they are available to everyone, they save money and they have many other advantages but at the same time, they are vulnerable to diseases and pandemics transmission. Therefore, a serious decline in public transit ridership was observed all around the world to slow down the transmission of covid-19. For example, in New York City this decline was huge, it was about 92% compared to the previous year (MTA, 2020). Yet some cities like Chicago in the USA enhanced the sanitation of public transports vehicles by developing new measures for cleaning can be not only useful for reducing the transmission risk of covid-19 but also can become a long term sanitation process for cleaner seats, handles, therefore for a safer vehicles (Bereitschaft, 2020).

Another solution for public transportation; in Turin, Italy, for example, there is a clear differentiation between the entrance and the exit of the buses, and at the stations like Porta Nuova, one of the most crowded stations in Turin. In addition, in Milan, Italy, the driver of the bus that took me from the center to the airport of Malpensa, was checking the body temperatures of the passengers and ensuring that everyone is wearing masks. Furthermore, a very easy procedure yet very effective happened in the big stations, and the airports; it consists of drawing and putting signs on the floors to maintain social distance between the passengers or the travelers. These measures of precautions were happening in many cities. Pandemic risks will always persist but it can be reduced by managing the crowd by social distancing measures, by correct and deep cleaning, and by sanitizing hygiene (Widjaja, 2020).

While public transportations were facing a decline, the use of bicycles and e-scooters was increasing in addition to the pedestrians which not only decreased the risk transmission but also as mentioned before, helped for less polluted and more sustainable cities. From this point, it is clear that the city and the urban features are well connected, and they can be at the same time the cure of the pandemics and the prevention of future ones if well designed.

#### **2.4.4. Public spaces**

Public spaces are the places dedicated to social interaction like the libraries, theatres, museums, sports stadiums, etc. where people get together to have fun, to relax, and to do activities. But the regulation of social distancing limited the use of these places of gathering and made people stay at home to avoid crowded places to prevent the covid-19 pandemic. Sports stadiums are a hotspot for the virus, these stadiums have a great number of spectators, sitting all together in a crowded way, which increases the risk of transmission of the virus. Also, international games lead to the spread of the virus to the other country's spectators and players which is a big problem (Halabchi,2020). As an answer to this issue, most of these public places were either closed or transformed into emergency hospitals, following the previous example, sports stadium were converted for different purposes; hospitals, coronavirus test sites, shelter for the homeless, etc. for example, in Europe, that was hardly hitten by the covid-19 pandemic, hospitals and similar functions took place on soccer and basketball fields (Thompson, 2020).

Architects and urban designers throughout history focused on the design of public spaces and arenas to attract citizens and to encourage social interactions and celebrations. Therefore today's architects and designers, after this pandemic, should rediscover new ways to design public spaces for social and recreational interaction following the new measures of social distancing and less density.

#### **2.4.5. Parks and green spaces**

Green spaces are considered healthy spaces that improve the well being of people. These spaces are public spaces that help to reduce stress, tiredness, and to have better physical, psychological and mental health (Rojas-Rueda, 2019). The importance of these spaces increased during the covid-19 pandemic because once the quarantine was over and the restriction was mitigated, people who were locked in their houses for a long period did not have any escape but to go to green parks (Bereitschaft, 2020) after feeling lonely, depressed and angry after all this isolation time.

This is a call for architects and urban planners to consider more the importance of green areas and parks in the cities. They will have to create more spaces and practices for citizens to go out feeling safe in the green areas following the regulation of less dense areas and social distancing. Increasing green spaces in cities and keeping them open for the public has to be part of redesigning the concept of the sustainable cities post covid-19.

In Singapore for example, even before the pandemic, a concept called “Park Connector Network” PCN was discussed and created to face the dense urban areas highly populated to make them somehow healthy and sustainable. This PCN is based on natural and green corridors that are made for walking, running, cycling and as its name says, they are made to connect parks and green spaces of Singapore, merging nature with the urban spaces (Wang, 2019). This network is better than dispersed parks, it is a network where citizens can walk in Singapore and explore the city by walking in the green passages between the different loops of the city as shown in figure 3 (Eltarabily and Elghezanwy, 2020).

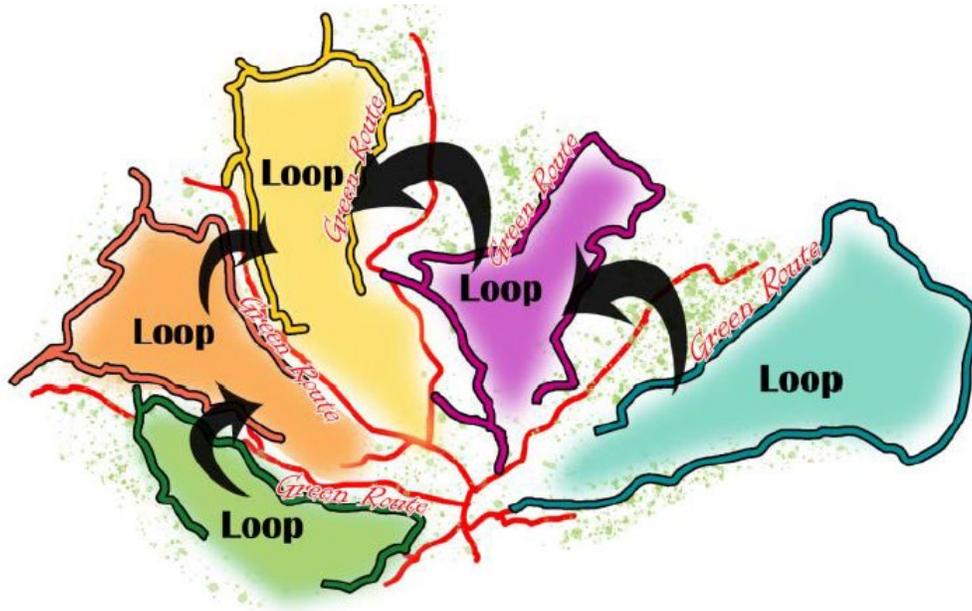


Figure 3. The idea of park connected network (Eltarabily and Elghezanwy, 2020).

Another solution could be public parks with social distance circles. For example in New York City, Domino Park has introduced a new concept coping with the covid-19 measures, it is about white chalk painting circles on the field. Each circle has a diameter of 2.5 meters and is distanced 1.8 meters from the other circle (Harouk, 2020). This idea helps people to follow social distancing procedures and enjoying the green areas at the same time easily and safely.

#### **2.4.6. Housing and building design**

After all that has been discussed before, it is obvious that design changes in urban features are necessary and this is mainly the architect's work. What about the houses and building design? It is the main concern of architects because it is where people spend most of their times from the morning till the night and especially when smart working and online courses appeared. Post covid-19 is different from pre-covid-19, everything has to change to deal effectively with the measure of prevention of the pandemic and to help to adapt to the new normal. Therefore, architects and designers should change the way they design living spaces, they should design healthy and comfortable spaces for better physical, psychological and mental health (Tokazhanov, 2020).

Covid-19 pandemic had encouraged the idea of living in a house with a surrounding garden, this latter provide better social distancing, produce organic fruits and vegetables, and it helps for a healthier lifestyle (Makhno, 2020), as discussed previously. While if a house is not possible, multi-story buildings should have a touchless passage from the main door of the building to the apartment door to prevent any virus transmission (Priday, 2020). Built spaces should be more flexible to adapt to any sudden emergency such as covid-19 pandemic. Additionally, in the cities, the expansion is usually done vertically but now it is time for a horizontal expansion (Megahed, 2020), that focuses on having less dense areas or in other words accommodating fewer people on a big land, this concept is characterized by the low rise or single-story building. High-rise buildings were designed to accommodate a large number of people in one place (Capolongo et al, 2020) sharing the same stairs, elevators, and entrance. But in the case of a global pandemic like covid-19, these common

spaces should be prevented and instead of high rise buildings, low rise buildings are better for preventing the spread of the viruses (Megahed, 2020).

According to Megahed (2020), architecture requires advanced technology in the construction industry to have more sustainable buildings as soon as possible. For example, the “modular construction strategy” is not new but it is effective during emergencies; it is about building quickly and in a less expensive way prefabricated standardized modules (Smith and Quale, 2017). Another solution already discussed before is the conversion of spaces or the adaptive reuse of public spaces like arenas and sports stadiums to create different emergency facilities. Lightweight and adaptable structures are as well a good solution during emergencies because of their speed and portability (Megahed, 2020).

From the public health view, there is a disease called Sick Building Syndrome (SBS) which is caused by the building’s design on human (Yu, et al. 2004), from this point architects and designers should focus on designing houses post covid-19 that will be most of the time occupied because of smart working, online courses, and quarantines.

Nevertheless, smart working is not available for everyone, some workers need to go back to their offices which put the office space under a new design with larger spaces and fewer seating options (Marr, 2020; Molla, 2020) which is easy to implement because the density in the offices decreased automatically when more than the half of the workers work from home, so the only changes should be placed on the spacing between the seats for the offices' workers, and the addition of green spaces and more openings for ventilation.

## 2.5. Social Media

During the covid-19 pandemic, social media played an important role in communicating information all around the world, the information was not only related to the public health field but also to the architecture field focusing on the process of redesigning the cities.

It is important first to explain what social media is and how it developed with time. The “social media” term definition, had changed and developed throughout history. In 1996, it was defined as computer networks linking people together (Wellman, 1996), then the definition in 1997 became a virtual community where people communicate using electronics (Romm, 1997).

The virtual community definition remained the same, but developed throughout the years; it is a community that reunites people with common interests and needs (Hagel, 1999). It consists of several people interacting together without any physical contact, around an understood focus on a shared interest, topic, or idea (Balasubramanian and Mahajan, 2001). Even if there is no physical contact, these people should have a common location which is a virtual place to meet in, for example, an email, or a chatroom (Ridings et al, 2002).

With the year 2006, a transformation occurs in social networks, it is the introduction of the “profile” for each user that shows some information about the user, for example, the date of birth, the nationality, the network of connections, etc (Acquisti and Gross, 2006). After two years this profile was updated to have the facilities to upload other contents, like music, photos, and videos, to message in different forms, and to make connections with other users easily based on the search of their profiles (Joinson, 2008). In 2015, social media were considered as communication channels facilitating the interaction (Carr and Hayes, 2015) to become in 2018 websites and applications allowing users all around the world to share and participate in social networking (Leyrer-Jackson and Wilson, 2018). Facilitating the communication to a very large audience in different countries and at different levels such as personal, professional, political, etc. (Kapoor et al, 2018).

Therefore, social media are websites and applications that allow users all around the world to create, share and communicate information, ideas, and daily content or to engage in social networking, no matter the location by using smartphones, computers, or any smart screen-supported device. After exploring many social media platforms, it is obvious that there are different types of platforms; there are the social networking platform where people meet like LinkedIn and Facebook, photo-sharing platforms like Instagram, Pinterest, and Snapchat, and video-sharing platforms like YouTube.

Social media is important because it became the most important and effective virtual platform not only for social networking but also for reaching in a new way a large number of people within seconds. The rise of social media has changed the world's perspective on communication and especially on risk communication.

## **2.6. Social Media and risk communication**

Public attention is a new concern that has been the focus of many disciplines like public health, economy, and politics. National and international researches providing wide indicators of attention are surely necessary and helpful but the problem is that they are not permanent, they are done periodically; on a given day or time but not minutes after or better to say before an event -a crisis or a pandemic- happens which doesn't help in warning and spreading precautions for the public to know how to behave and what to do facing that event (Ripberger et al, 2014). From that point these temporary sources are not enough anymore which turn the focus on the social media platforms like Twitter, Facebook, youtube etc. that are accessed daily and easily. These new platforms are open and free for everyone to express their opinions or ideas or even to spread information; they allow a global communication in no time, they allow risks communication (Wright and Hinson, 2009).

Risk communication, as the word says, it is the act of communicating risks or the act of warning people before the exposure to a danger. It is the exchange of advice and information between experts and people whose health is threatened. Its purpose is to enable people at

risk to take informed decisions and act in the right way to protect themselves and their loved ones.

Earlier, risk communication studies have focused on the importance to have a participatory risk communication and not only a one way or linear communication (Ding and Zhang, 2010). This latter represented the technocratic approach, that saw the risk communication as a oneway between scientists and experts sharing the risks information and analyses to the public which doesn't include any other opinions or participation and democracy (Grabill and Simmons, 1998), so this where social media played an important role in breaking that linearity in communication and have a multichannel or more participatory communication (Ding and Zhang, 2010).

Social media, being a fast platform that reaches the entire world within seconds, has changed how people access risk information. People being able to reach any information at any time and at any place, do not need any more to only rely on the government or traditional media as their primary information source especially during a national crisis or a pandemic, in this case, the coronavirus pandemic. Social media became the most important communication tool offering participation, conversation, connection, and openness to the world (Mayfield, 2006). The news and information of a crisis or a pandemic can be shared and reshared a million times in one second to reach a large number of people from all around the world without even the presence of one journalist (Veil et al, 2011). Social media showed a lot of benefits for risks communication; since social media is used by a big number of people, it is a perfect way to spread information that reaches more people and it provides quick responses and changes in behaviors, therefore emergency managers should give importance to this new way of communication to manage and control emergencies (White, 2012). In addition, the different social media platforms shown in Figure 4, help for better coordination between experts and the public, these platforms are offering awareness by sharing contents like images and videos of how a crisis is evolving or even before the crisis happens to improve preparedness; for instance in 2009, during the influenza pandemic, tweets were helping to give location for sites where vaccination against H1N1 was happening (Wendling et al, 2013). As well during this Covid-19 pandemic, since people were under quarantine in their houses, social media was the only way to stay updated permanently on the news, and

to know what precautions and measures should be applied during this emergency time to prevent the spread of the virus, like wearing masks, social distancing, washing hands more and more, preventing direct contact with people, etc. and to see what people infected are facing to take the virus seriously and take more precautions.

Type of social media	Examples	Use for risk and crisis communication
Social networking	Facebook Myspace Friendster	Enhance coordination among volunteers and emergency services, allow to share information inside a community, provide swift update on emergency situation, etc.
Content sharing	YouTube Flickr Vimeo	Enhance situational awareness in real time through exchange of pictures and videos, allow emergency services to easily launch viral campaigns about risks, can help identify missing individuals, victims, etc.
Collaborating knowledge sharing social media	Wikis Forums Message boards Podcasts	Enhance dialogs between victims and emergency services
Blogging and microblogging	Blogger Worldpress Tumblr Twitter	Convey Recommendations, warnings, share facts Twitter allows to have immediate information sharing with a wide reach and feedback possibilities
Specialised crisis management platform managed by Volunteer Technology Communities (VTCs)	-MAPPING COLLABORATION OpenStreetMap Crisis mappers Google map maker  -ONLINE AND ONSITE CONTRIBUTION Ushahidi Crisis commons Sahana foundation Geeks without bounds  -PUBLIC-PRIVATE-PEOPLE PARTNERSHIP Random Hacks of Kindness (with Google, Microsoft, Yahoo, NASA, World Bank)	Mapping of emergencies, Community Emergency response team facilitator

Figure 4. The different types of social media used in risk and crisis management (Wendling et al, 2013).

Social media helped in sharing information during the pandemic not only related to public health, but also to fields capable to help in preventing the virus spread and in adapting to the new normal way of life. For instance, the World Health Organization (WHO) is now using

social media platforms like Twitter, Facebook, YouTube, Instagram, Linked In, Google+, and some others enhancing the ability for users to engage in public health topics. By using more visuals, pictures, videos, and infographics, information is simplified, more understood with a fast and lasting impact (WHO, n.d). During the covid-19 pandemic, since the beginning of the pandemic till now, WHO has shared 136 videos of information, measurements, and reports of the virus.

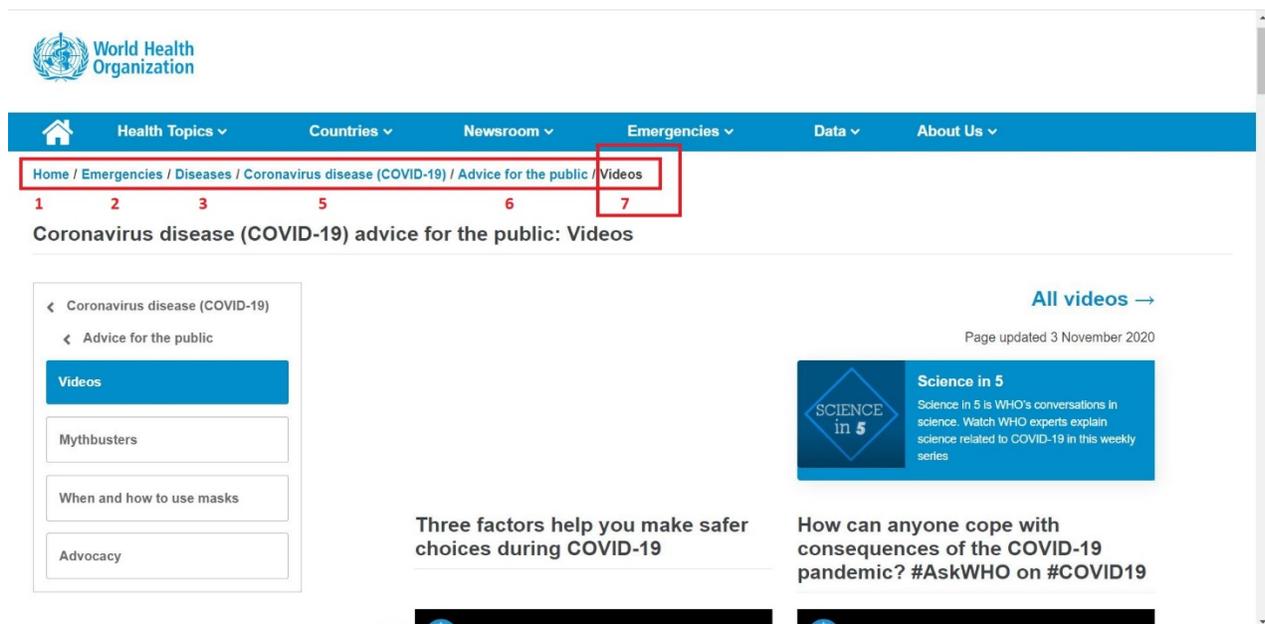


Figure 5. Screenshot of the WHO official website (www.who.int, n.d.)

In figure 5, it is shown how in the official website of WHO there is a page related only to videos. It is also shown how to have access to these videos by following the 7 steps; starting with the Home page, then the emergencies, then the diseases followed by the coronavirus disease, then the advice for the public to choose at the end of the videos.

In Figures 6 and 7, some videos from different types are visible, like how to break the transmission chain, or how to cope with the consequences of the virus, instructions to do a fabric mask, and some questions and answers videos. In conclusion, all types of information related to covid-19 are present under the video section.

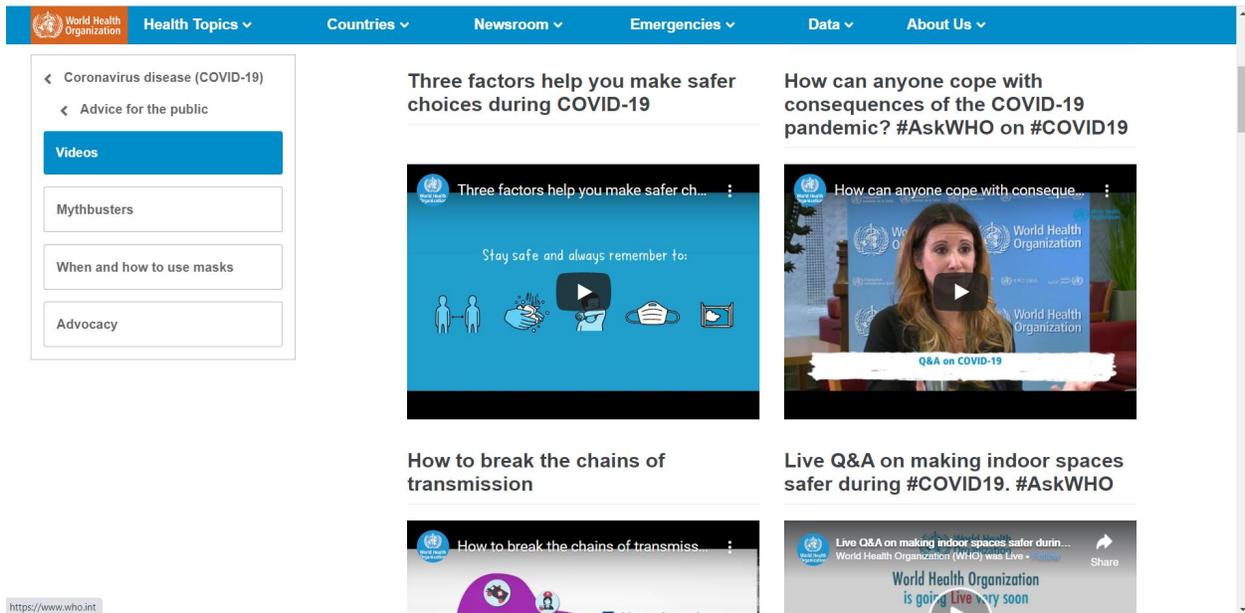


Figure 6. Screenshot of the WHO official website (www.who.int, n.d.)

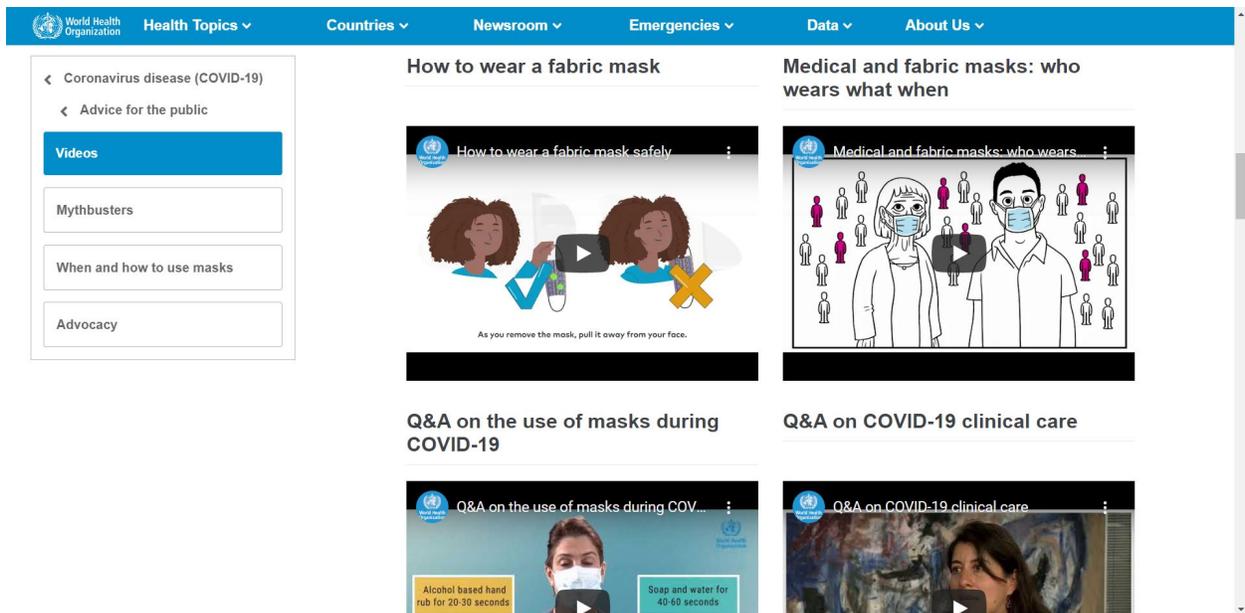


Figure 7. Screenshot of the WHO official website (www.who.int, n.d.)

It is important to mention that these videos are linked directly to the WHO YouTube channel (see figure 8) or found on the WHO official page on Instagram (see figure 9). People that don't have direct access to the WHO websites have the potential to watch these videos or in other words to participate in the public health community by commenting, or even only by watching the videos, because in that way they are not only watching but they are participating in the public health field by acquiring the information.

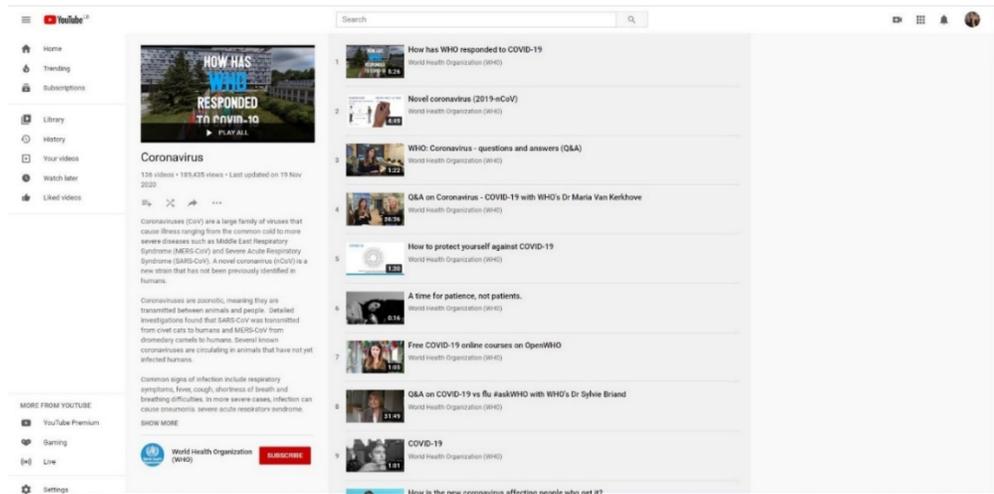


Figure 8. Screenshot of the WHO page on YouTube ([www.youtube.com](http://www.youtube.com), n.d.)

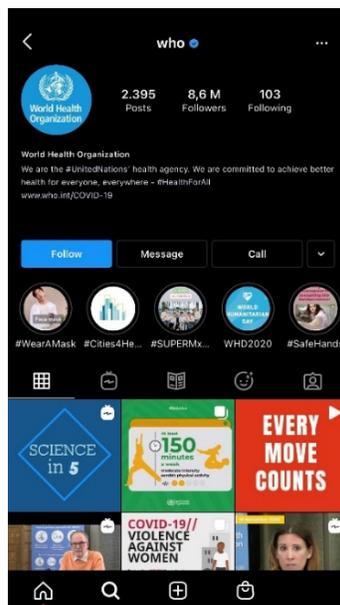


Figure 9. Screenshot of the WHO account on Instagram ([www.instagram.com/who/](http://www.instagram.com/who/), n.d.)

## **2.7. Social Media, architecture and the city**

As discussed before, architecture and urban planning are as important as hospitals in curing the city from the virus and prepare the cities for future pandemics, they are responsible for redesigning the cities coping with the new measurements as the new normal of life.

The use of social media in architecture isn't new; in the past five years, the world has experienced an obvious evolution in social media across different disciplines. Architecture was also affected in the way architects communicate with the world to keep up with the architectural and urban worlds. An architect can now share concepts and ideas on social media platforms connecting millions of users globally in one touch using mobile technology (Arch20, 2014). The power of these platforms in business is not under discussion anymore, yet it is a useful and necessary tool for architects. For architects, social media allow the project to spread and travel in a fast way, it can serve as a tool to share visual contents like photos and videos, data, opinions at the service of urbanism (Toscano, 2017).

The process of "information" at the urban level is important between individuals, it leads to the "interference" concept of communication and information for a better urban structure (La Pietra, 1971). Today 50 years after, technology has evolved allowing the use of many platforms to share information to study the urban areas and the cities. Additionally, innovating and redesigning cities and urban areas should take into consideration the act of capturing, analyzing, and visualizing information, opinions, visual content, and data shared by citizens on social media (Toscano, 2017) and according to Laura Kurgan; in architecture and urban planning, info about spaces and geography helps to find where the events are happening and how things are moving and how things are connected which help in designing and shaping cities based on the things people do and the places they visit. From that point, the way people experience a city is always accompanied by a dense amount of information from social media platforms in the form of geolocated comments, reviews, and check-ins that help researchers and urban planners to have a wider and more precise vision of the urban spaces (Ciuccarelli et al, 2017). Therefore urban technologies allow the participation of people in shaping their urban environment and to have a connection between the city and

the citizens and to share common urban issues. (Paulos *et al*, 2008; Foth *et al*, 2011; de Lange and de Waal, 2012). This help in designing usually and redesigning cities, after a pandemic, for example, coping with what fits the citizens, and these latter will feel a sense of responsibility toward the city and themselves by sharing important issues they would like to fix in the city (De Lange and De Waal, 2013). The idea of citizen engagement in shaping their environment began in the 1970s, for example, the “placemaking” concept is a concept that allows local people to share their opinion with town planners before making the new place (Beyea et al, 2009).

## **2.8. Social media communicating concepts of the city post covid-19**

After what was discussed before, it is important to tell the importance of social media, this technology helps architects to share and communicate concepts and designs, it also helps them to research and have conversations about important topics like building materials, performance, and manufacturing, it helps urban planners to track and to understand which place is denser than the other, it also helps the citizens to participate in creating cities and showing issues from the public side and it helps the people to interact together through distance especially during pandemics.

Now during this covid-19 pandemic, a new clear addition to the previous benefits is that social media helped more in the participation of experts in architectural fields to share their knowledge related to the pandemic to redesign new cities adequate to the new norms of social distancing.

Moreover, this pandemic has encouraged the smart working or the work from home concept to prevent the spread of the virus among workers in the offices (Utami, 2020). Work from home concept for architecture creates new ways of exchanging designs, ideas, and experiences together and with the public (Walsh, 2020). Since quarantine is a must, and work from home is necessary, social media platforms are the only way to communicate what is happening; some software to share info between architects cannot be accessed by the public because of some privacy rules. But the important information and the new concepts

of the city post-covid-19, which are important for every person to know, are shared with open access for everyone on famous social platforms like Instagram, Facebook, and Youtube that are easily accessed. In this research, the main focus will be on the YouTube platform communicating during covid-19 information and concepts of cities post covid-19.

## 2.9. YouTube and communication

YouTube platform has become one of the top used websites on the internet for video sharing and it is also considered as a platform for sharing information globally. Moreover, it is important to mention that other social media platforms like Facebook, Twitter, and even other websites, when sharing videos, this latter can be under the name of YouTube.

### 2.9.1. Importance of video content and YouTube

The use of online videos especially on YouTube is increasing and offering global communication and forming an information platform on our daily news and topics, and in our case on covid-19 pandemic to an extent that it can replace the journalistic news channels, that is shown in figure 10. (Kalogeropolous et al, 2016).

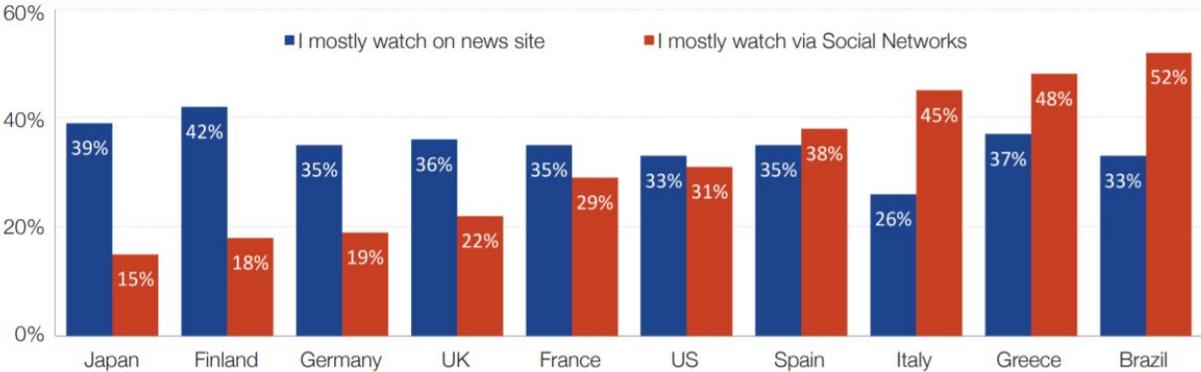


Figure 10. Balance between on-site and off-site news video consumption in some countries (Kalogeropolous et al, 2016).

YouTube platform has around a billion users (YouTube, 2018) and a large number of these users consider YouTube as a source of information related to science, technology, and medicine (Allgaier, 2016) and recently related to architecture and urban planning or more precisely to cities post covid-19 pandemic.

The video media has a greater power than other types of media in spreading knowledge, it can contain images, animations, subtitles, and many other types of communication media all combined (Allgaier and Svalastog, 2015). The YouTube video becomes popular with the high number of views which is related to the video itself; the content factors of the video such as its topic, its duration, its style, and the perfect date and time to upload the video (Welbourne and Grant, 2016). Additionally, for this new generation, of which I am part, videos are considered more appealing, and they transfer the message effectively to make it easier for the viewers to understand and to learn, therefore YouTube is more popular and accessed by young people (Allgaier, 2009). For example in Germany, 94% of people with age between 12 and 19 know YouTube and 81% of them use it a lot (Medienpädagogischer Forschungsverbund Südwest, 2015). Also, a study from Austria, found that more than half of YouTube users use it for learning or getting informed about some topics (Artworx, 2015). From that point it is important to say that the YouTube platform is considered as an important information source, and of course, the number of users automatically increase during extraordinary situations and in this case, it is during the covid-19 pandemic where people had to stay at home; therefore YouTube helped them to stay updated to all the news on different fields.

### **2.9.2. YouTube and architecture**

Since there are no peer-reviewed videos on YouTube, it is difficult to know which video is presenting accurate information and which is not, therefore it is necessary and important to know what channels to subscribe to and to follow their news. Some verified channels or some new channels might be the answer because they share important messages that people trust. This is mainly related to public health information and the exact precautions to take, but when it comes to architecture and urban planning, other than these verified channels that share accurate information, there are also some other

channels that present topics presented by architects, urban planners and experts that might be also very important.

Therefore, YouTube is very important in sharing these types of videos that help architects and urban planners working from home not only to stay connected to their work in their cities, but they can also reach other experts all around the world, to know how to redesign cities and how to act to prevent the virus spread, by using the technology and from home. It is the act of online participation or the participatory culture.

### **2.9.3. YouTube; a participatory culture**

YouTube doesn't have a clear definition, it is much more complex than it looks. It started as a personal storage place for videos to become a public platform for different uses (Burgess and Green, 2009). This unclear definition makes YouTube a source of cultural "generativity" (Zittrain, 2008) being a broadcast platform, a video archive, and a social network.

YouTube's definition is very similar to how Stephen Heath described the television:

*"Somewhat difficult object, unstable, all over the place, tending derivisely to escape anything we say about it: given the speed of its changes (in technology, economics, programming), its interminable flow (of images and sounds, their endlessly disappearing present), its quantitative everydayness (the very quality of this medium each and every day)."*

*(Heath, 1990: 267)*

Sharing the same description, YouTube is considered as an unstable object; having a continuous change in its videos and organization, offering different topics and content, and being used daily, it became a domestic object that we don't think about it. From this point, it is difficult to have a clear understanding of what YouTube is. But can we answer the question of who is YouTube for?

In 2006, for Time Magazine, the person of the year was “You” (see figure 11), with a video background similar to YouTube’s. This concept was to give importance to the participation in the participatory culture by sharing videos.

YouTube today, is a result of the participation of many different users with different purposes. A participatory culture is a culture that supports artistic expression and civic engagement (Jenkins, 2009) showing an informal mentorship between amateurs and experts to create a social connection between contributing members. Therefore YouTube is at the same time a business for professionals and a cultural resource co-created by the users (Van Dijck, 2013) who produce and publish and the audience who engage around them.

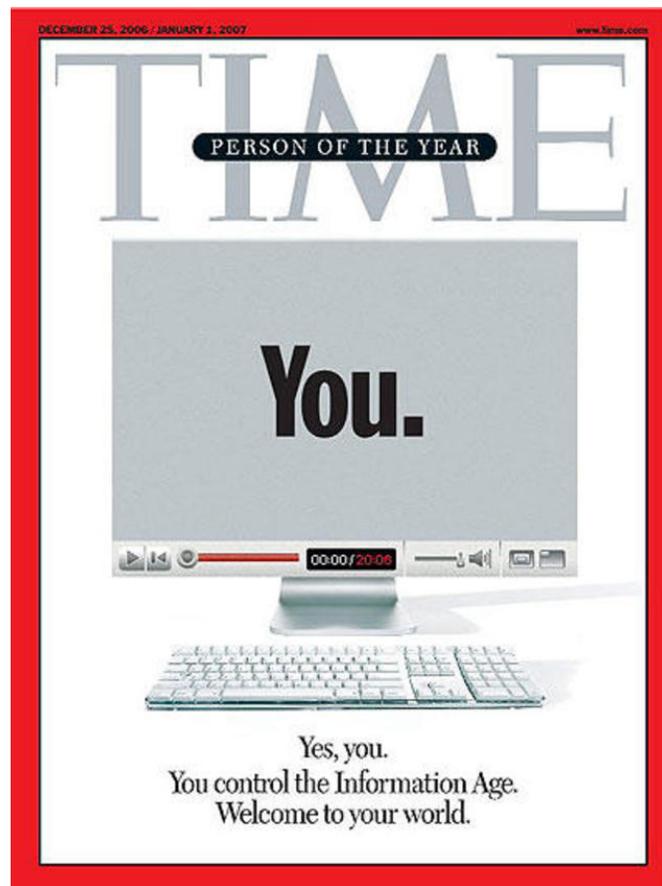


Figure 11. Time Magazine's cover page of the December 25, 2006 issue.

*“ YouTube’s value is not produced solely or predominantly by the top-down activities of YouTube. Rather, various forms of cultural, social, and economic values are collectively produced by users en masse, via their consumption, evaluation, and entrepreneurial activities. ”*

*(Burgess and Green, 2009)*

Youtube houses different types of participants varying between large media producers reaching global audiences like TV shows and advertisements, small to medium enterprises for free and easy distribution platforms like starting businesses, and many others like educational institutions, artists, and amateurs producers. Each of the users finds YouTube compatible with their purposes and aims, shaping it as a dynamic website serving different users and having different feedbacks. Even if not sharing anything, the fact of watching YouTube is a participatory culture because the act of watching a specific event or a specific video is intended and on purpose by entering the application and searching for it.

Additionally, YouTube is presenting the 360° videos (see Figure 12), known as immersive or spherical videos (Etherington, 2015). These videos are records of views in all directions at the same time like a panorama, where the viewer can control his views by changing the angle of view as he prefers. This concept is really important nowadays, during the covid-19 pandemic, since traveling became so difficult, which allows users to virtual travel and to discover new places and new cities with architectural importance while sitting at home.



*Figure 12. YouTube 360-degree video (SlashGear, 2015)*

Following what was discussed, YouTube is not only a platform to share videos but it is also a platform of participation, this can be also done without even sharing but by the act of watching. YouTube has the potential to reach every person in the city and make him reacts or acts to change. From here, videos showing and transferring information about the city post-covid-19, create a sort of participation, a transformation in the city, also the 360 degrees videos presenting cities from different views can also create an enrichment of the city representation in the pandemic.

This literature review helped me to discover the history of pandemics and the cities, the new covid-19 pandemic with the city post-covid-19 concepts. As well as the importance of social in communicating risk and architectural concepts especially the YouTube platform and its the role of social media in architecture and communication to focus at the end on the YouTube videos, their importance, and the relation between them and the architecture by the concept of participatory culture during and after this pandemic.

This literature review helped me to discover what are cities post covid-19 like, the importance of social media in architecture communication, YouTube especially and how this latter is communicating urban and architectural information and how it allows the participation and interaction of users, especially during covid-19 pandemic. This led me in this thesis to focus on two types of videos; the informational ones and the 360 degrees ones that will be analyzed and discussed.

## **3. METHODOLOGY**

### **3.1. Overview**

This chapter will discuss the research methodology used in the thesis to answer the research question. It will also go through the type of research and the criteria used for data collection and filtering.

### **3.2. Overall Process**

This part discusses the overall process of this research study. At the first beginning, following the main topic and the research question of the thesis, a literature review was done to understand the role of architecture in the city during the covid-19 pandemic, post-covid-19 cities, and the importance of social media focusing on the YouTube platform in communicating this information to the users and the participation of these latter.

The previous chapter has tackled architecture and social media during the covid-19 pandemic. Additionally, it has provided comprehensive information about the way covid-19 has reshaped cities and how social media especially YouTube communicated important news.

The chapter has also shed light on how YouTube plays an important role in not only sharing videos but also in emerging people into the topic allowing their interaction and participation. The covid-19 pandemic was the turning point that made architecture goes online. As a result, architects, urban planners, and random people had to follow more YouTube to stay updated with the new transformation of cities, their new designs, and also to travel virtually, visit new cities online.

By going through the literature review, it was obvious that previous researches discussed, on one hand, the role of architecture in preventing the spread of the virus and on the other hand the role of social media and YouTube during the covid-19 pandemic focusing on the public health sector.

From that point, a gap in the connection between these two important subjects; YouTube and Architecture in pandemics was detected. Therefore this thesis will be filling this gap by combining the two subjects and by studying the important relationship between them by answering the following questions:

- How does YouTube communicate urban and architectural information during the covid-19 pandemic?
- How does YouTube allow the participation and the interaction of users in these topics?
- How does YouTube offer the chance of virtual traveling?

### **3.4. Research Methodology**

An appropriate research design should be taken into consideration in this thesis, it must be efficient and suitable for the study as it is the first step of how the researcher is going to answer the proposed research question of the thesis. To not be confused, “methodology” and “methods” are not the same. Cook and Fonow (1986) define methodology as ‘the study of methods and not simply the specific techniques themselves’. “Method” is what the researcher did and what he used as tools and techniques while “methodology” is the explanation of how the researcher did use those tools and techniques.

Two types of research methodologies exist; the qualitative and the quantitative, what differentiates them is the use of numbers in the quantitative method. To choose the appropriate one for the research study, the researcher has to specify the question and the type of data needed to answer it. The qualitative method relies on non-numerical data and it presents social events focusing on the relationship between variables (Hegde,2015). While, the quantitative method is used to experience if a group of people would or would not do a certain behavior based on statistical data (Hegde, 2015) and in some researches a mixed methodology of qualitative and quantitative can be used. As shown in figure 13, to choose the suitable methodology, the researcher must know exactly what he wants to study, the main purpose of his study, the measurement of variables or their description, the sample, the focus of inquiry, the main research topic and even the analysis and the communication of findings should be taken into consideration to choose the appropriate research approach

(Kumar, 2018).

Difference with respect to:	Quantitative approach	Qualitative approach	Mixed methods approach
<b>Underpinning philosophy</b>	Rationalism: 'That human beings achieve knowledge because of their capacity to reason' (Bernard 1994: 2)	Empiricism: 'The only knowledge that human beings acquire is from sensory experiences' (Bernard 1994: 2)	Both are valuable to social research theory and practice. That knowledge can be gained through both the capacity to reason and sensory experiences.
<b>Approach to enquiry</b>	Structured/rigid/predetermined methodology	Unstructured/flexible/open methodology	Can be structured, unstructured or both
<b>Main purpose of investigation</b>	To quantify the extent of variation in a phenomenon, situation, issue, etc.	To describe variation in a phenomenon, situation, issue, etc.	To quantify and/or explore with multiple or mixed methods a phenomenon to enhance accuracy or yield greater depth
<b>Measurement of variables</b>	Emphasis on some form of either measurement or classification of variables	Emphasis on description of variables	Measurement and/or description
<b>Sample size</b>	Emphasis on greater sample size	Fewer cases	Larger sample size for some aspects and smaller for others, depending upon the purpose
<b>Focus of enquiry</b>	Narrows focus in terms of extent of enquiry, but assembles required information from a greater number of respondents/sources	Covers multiple issues but assembles required information from fewer respondents	Narrow or broad, or both, depending upon the methods used
<b>Dominant research topic</b>	Explains prevalence, incidence, extent, nature of issues, opinions and attitude; discovers regularities and formulates theories	Explores experiences, meanings, perceptions and feelings	Both or either, depending upon the methods used
<b>Analysis of data</b>	Subjects variables to frequency distributions, cross-tabulations or other statistical procedures	Subjects responses, narratives or observational data to identification of themes and describes these	Quantitative or qualitative or both, depending upon the objectives
<b>Dominant research value</b>	Reliability and objectivity (value-free)	Authenticity, but does not claim to be value-free	Dominant value of one or both of the paradigms
<b>Communication of findings</b>	Organisation more analytical in nature, drawing inferences and conclusions, and testing magnitude and strength of a relationship	Organisation more descriptive and narrative in nature	Similar to the quantitative and/or qualitative approach

Figure 13. Differences between qualitative, quantitative, and mixed methods approaches (Kumar, 2018).

Since the study in this thesis, is unstructured and flexible, and it describes how the YouTube platform is playing an important role in the architectural field recently, especially during the covid-19 pandemic, based on the description of variables which are the videos on YouTube and the participation of users focusing on a small number of cases (30 videos), to achieve the thesis objectives, and according to the content of the previous figure by Kumar (2018), the research question will be answered by a qualitative research approach that use methods of data collection and analysis that are non-numerical but descriptive and narrative in nature to understand the importance of YouTube in the architectural field.

### **3.5. Design method and Procedure**

As mentioned previously, the researcher conducting this study will be using the qualitative methodology. To do that using YouTube, it is important to focus on how YouTube communicates urban and architectural information and on how YouTube allows the participation and the interaction of users. This study will be done by choosing a sample of videos from YouTube that shows the importance of YouTube in the architecture field where interaction and participation of users is obvious which means videos with relevant data and then this will be followed by analysis using the storytelling method.

The researcher will choose a sample of 30 YouTube videos. However while doing so, he will have to follow a certain rationale to pick the correct videos with the needed information.

#### **3.5.1. Rationale to select videos**

The chosen rationale should answer the topic of the thesis. It is a very important part of the work because all the other steps will be based on these videos. As already discussed two types of videos will answer the research question of this study; the informational ones providing news and information about the pandemic and the architectural field and the 360 degrees ones that present views of cities in all directions where users can change the angle of view they prefer to discover the cities.

To do that, the following rationale was followed to choose the 30 videos of this study:

- 1- Typing keywords related to the topic (pandemic and the city, covid-19 and the city, pandemic and architecture, covid-19 and architecture, virtual city 360, virtual traveling 360, etc...).
- 2- Choosing videos with related and important titles.
- 3- Checking mainly top viewed videos.
- 4- Choosing videos where comments are available and not turned off.
- 5- Video of 15 minutes maximum.
- 6- Watching all of the videos to make sure it is a good choice.

While choosing the 30 videos, these latter were divided into two categories; the verified channels and the unverified channels having each 3 sub-categories:

- 5 videos about covid19 and the city.
- 5 videos about covid19 and architecture.
- 5 videos about virtual reality 360 travel.

So in total, each category has 15 videos related to the main topic of this research ready to be studied and well-analyzed using the storytelling methodology.

### **3.5.2. Storytelling or narrative analysis**

The storytelling, or the narrative analysis offers a different way of knowing and of studying topics related to human beings and their relationship with social and cultural contexts. Stories have always been an interesting and important way to communicate by using texts, photos, pictures, and film or videos of course. Since the research topic of this thesis is based on YouTube videos in the architectural field and the users' interaction, the storytelling method was selected to explore and discuss the videos and the interaction because this latter helps to describe and explore the videos based on 5 main basics.

The storytelling process has 5 main basics; the story, the discourse, the characters and archetypes, the elements that catch the attention, and the role of the audience (Monaci, 2019) as discussed in the following part.

- **The story** which is based on the facts of the discourse, this means “who” is talking, “what” is he saying, “how” is he saying it, “when” did he say it, and “where” he said it. So it is about the speaker, the topic discussed, the way of presenting the topic, the time, date, and, the location of the video process.

- **The discourse** which is based on how the selected video is better than others in finding solutions to problems, in bringing benefits to the community, and how it is better than others in bringing daily issues and fulfilling the user or the community's needs.
  
- **The characters and the archetypes** to which the speaker is addressing, this point is very useful especially when transferring a message to the society. Talking to the lens of the camera is more like talking to fictional people. But in reality, behind the camera lens and after sharing the video real people in the real community will be listening and watching the topic.
  
- **The elements that catch the attention of the audience**, that are mainly necessary in appealing the audience, therefore, in having a big number of viewers. This is about how the speaker presents his topic to have higher interaction with users, it could be videos like in this paper, or it could be some other interactive features and social media references and also by using an active, attractive, and descriptive title
  
- **The role of the audience**, which in its turn is also necessary because the speaker has to connect with his audience. He has to define precisely who will watch the video and to try to prevent further issues about the topic by using accessible language, a clear and simple one. It is about anticipating the needs and answering the questions of the target.

Following the storytelling methodology's basics, an analysis was done on each of the 30 chosen videos.

## **4. RESULTS**

### **4.1. Overview**

This chapter will present the analysis of the data obtained from the chosen videos following the storytelling methodology. As mentioned in the previous chapter, 30 videos were chosen according to the set rationale. The videos were divided into two main categories; the verified channels and the unverified channels that are divided each into three sub-categories: “covid19 and the city” with 5 videos, “covid19 and architecture” with 5 videos, and “virtual reality 360 travel” with 5 videos. Therefore each category has 15 videos, and in total, the study presents 30 videos ready to be analyzed in this chapter based on the 5 basics of storytelling. Findings will be presented objectively with no discussion of what the results mean.

### **4.2. First Category – Verified Channels**

#### **4.2.1. Covid-19 and the City**

1) New York City under covid-19 quarantine: quiet streets and closed stores.

##### Story:

There is no speaker in this video but the video itself is representing a very important message, it is showing how New York City, one of the busiest cities ever, in March 2020 was quiet and empty because of the covid-19 quarantine (Guardian News, 2020).

##### Discourse:

Since this video has no speaker, it has only visual content of the city that shows how New Yorkers are facing this pandemic by doing social isolation and self-quarantine. This video is important because it show the people how the busiest streets are empty, how the stations

are not crowded at all, how people are wearing masks. It also shows how all of the shops are closed and the public areas are empty where cars are barely passing. It is showing how New York City has been transformed into an empty city because of this pandemic (Guardian News, 2020).

#### Characters:

The video is mostly addressed to New Yorkers or people interested in New York City, but it is also a very useful video for every person interested in cities during covid-19 in general to see how these latter are changing and transforming into empty cities. Mainly, architects and urban planners have the curiosity to stay updated on what happening around the world to discover appropriate solutions and design concepts to face the virus.

#### Elements catching the attention of the audience:

Since New York City does not sleep and is always crowded 24/7, the title itself is important “New York City under covid-19 quarantine: quiet streets and closed stores”, additionally the chosen music with the rapidity of the video go very well together, making the watcher interested to watch this quick video yet showing everything in the city briefly.

#### The role of the audience:

This video has 346,788 views and 503 comments, which shows the high interaction of the audience with the video, some of them just watch but some others comment and participate in discussions presenting their opinions.

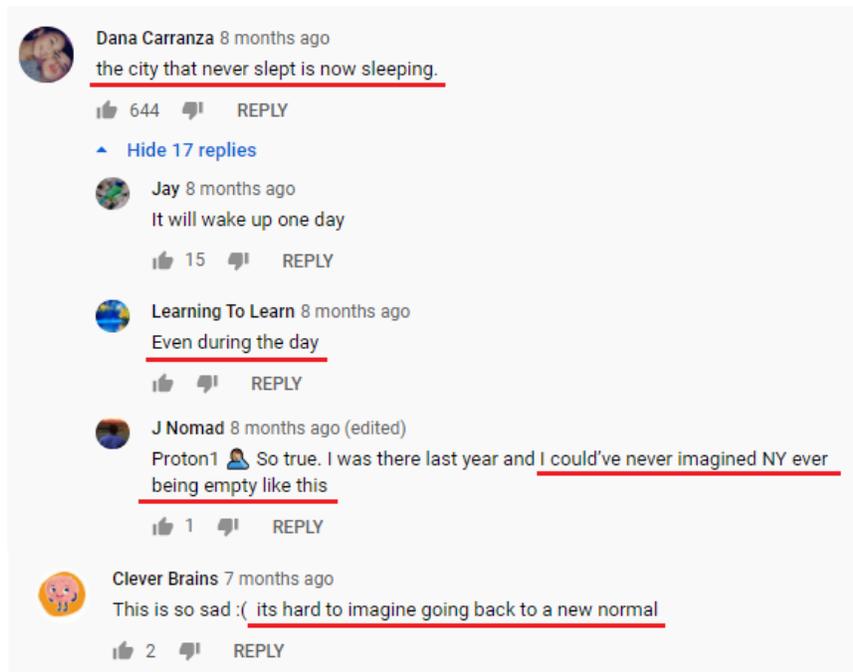


Figure 14. Screenshot of comments of “New York City under covid-19 quarantine: quiet streets and closed stores” YouTube video (author).

As shown in figure 14, viewers are participating and sharing their opinions related to the video specifically or in general talking about the new normal.

## 2) The Future of Cities After Covid-19 | WSJ.

### Story:

In this video uploaded in August 2020, Jaden Urbi, a video journalist, discusses after research done, how Covid-19 is reshaping the cities by presenting an illustrative video of 8 minutes including an intervention of Nayan Perekh, a principal at Gensler architecture firm in Singapore who talks about the importance of design in reshaping cities (Wall Street Journal, 2020).

### Discourse:

The video is really important, it explores how the way we work, shop, play, and live are changing as urban designers are focusing on health, technology, and open spaces. It starts by giving a look at pandemics throughout history with responses that have lasting impacts. For example in the 19<sup>th</sup> century, the plague in London helped to improve sanitation, adding that large shocks always cause everlasting changes in the cities' design. After the covid-19 pandemic, big adjustments are necessary for example in work, shift will be necessary to prevent the density, additionally to remote working and online booking system to book a desk. Yet some jobs cannot be done remotely which leads to the closure of many retails permanently. Shopping becomes online, for food, clothes, and everything needed. Also, the concept of 15 minutes city is discussed where everything needed is within a short walk of home, with wider pedestrian streets and more bike lanes. While entertainments and cultural centers based on people interaction will need outdoor spaces and extending restaurants to the streets (Wall Street Journal, 2020).

### Characters:

The video is mostly addressed to every person living or interested in the city life and design post-covid-19 pandemic. Architects and urban planners are considered a part of this audience because they are the ones responsible for the city's design and changes.

### Elements catching the attention of the audience:

This video is an illustrative video, fun to watch, and very easy to understand with really important information about the past, the present, and the future of the city considering pandemics especially the covid-19 pandemic.

## The role of the audience:

This video has 313,803 views and 568 comments, which shows the high interaction of the audience with the video, some of them just watch but some others comment and participate in discussions presenting their opinions.

In figure 15, 16 people are interacting together about the topic, some of them are with some others are against it. It is really important to see how this video is creating so many interactions between users.

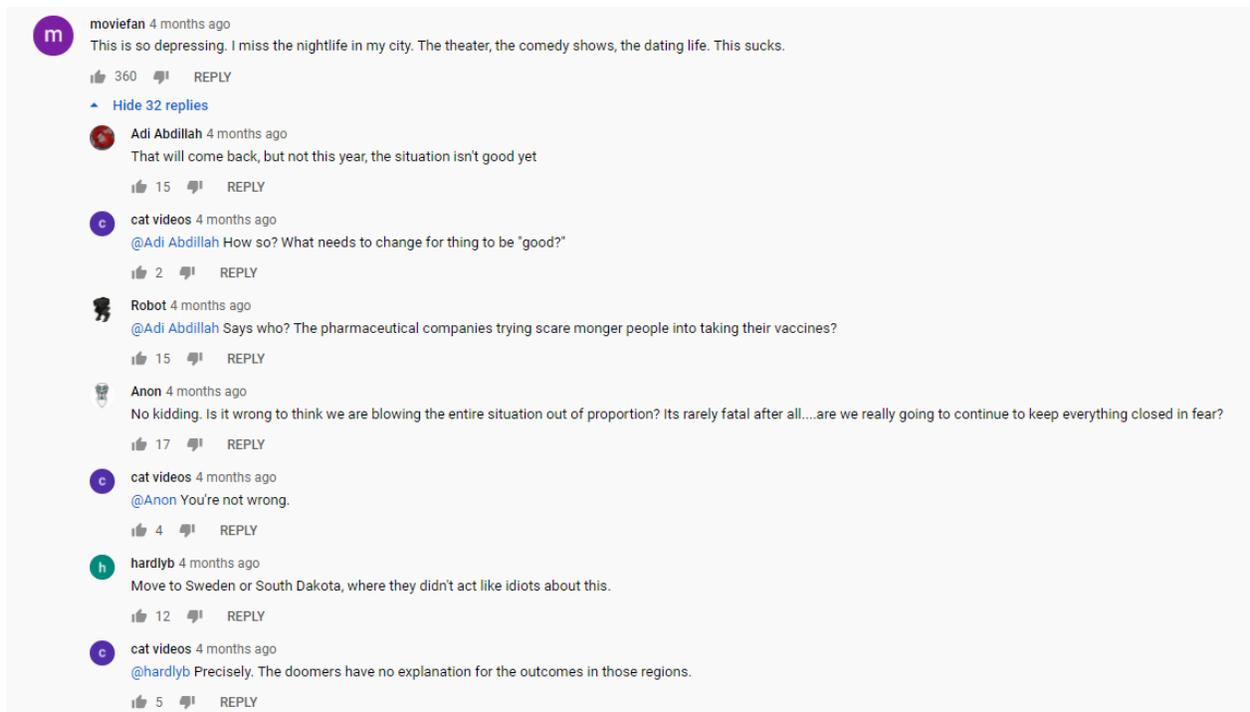


Figure 15. Screenshot of comments of the “The Future of Cities After Covid-19 | WSJ” YouTube video (author).

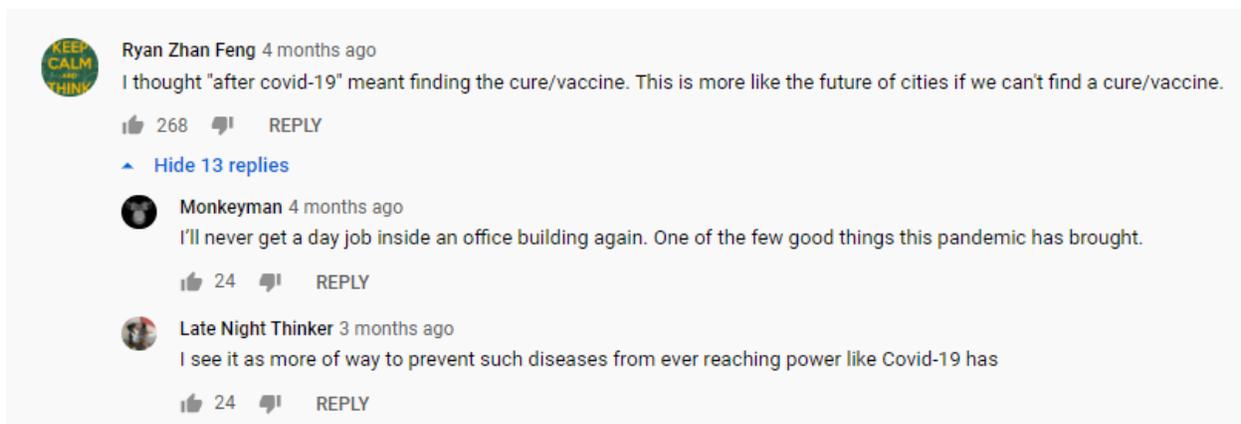


Figure 16. Screenshot of comments of of the “The Future of Cities After Covid-19 | WSJ” YouTube video (author).

### 3) Ghost Town: Flyovers of Cities on COVID-19 Lockdown.

#### Story:

There is no speaker in this video but the video itself is representing a very important message, it is showing from an aerial view in march 2020, how New York, Los Angeles, San Francisco, and Seattle have changed because of the covid-19 lockdown (VICE, 2020).

#### Discourse:

Since this video has no speaker, it has only visual content of the four cities that shows how these latter are facing the virus. This video is important because it shows how streets in the cities are empty, there are no cars, no pedestrians, sports stadiums are empty, schools are empty, there is nothing. The cities look like abandoned cities (VICE, 2020).

#### Characters:

The video is mostly addressed to citizens of these cities that cant go out to see what their city looks like during the pandemic, but it is also a very useful video for every person interested

in cities during covid-19 in general to see how these latter are changing and transforming into empty and abandoned cities. Mainly, architects and urban planners have the curiosity to stay updated on what happening around the world to discover appropriate solutions and design concepts to face the virus.

#### Elements catching the attention of the audience:

This video has the title of “ghost town” which is so attractive for users to watch and understand the meaning of the title. Those cities are neither ghost cities nor abandoned cities but they are under lockdown and citizens are isolated in their houses. Even if there is no discourse but the necessary message is being transferred.

#### The role of the audience:

This video has 456,064 views and 1,512 comments which shows the high interaction of the audience with the video, some of them just watch but some others comment and participate in discussions presenting their opinions.



*Figure 17. Screenshot of comments of the “Ghost Town: Flyovers of Cities on COVID-19 Lockdown” YouTube video (author).*

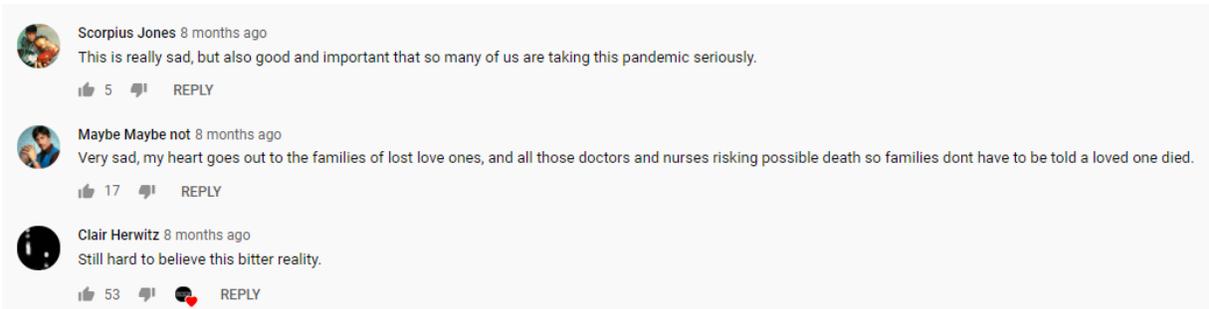


Figure 18. Screenshot of comments of the “Ghost Town: Flyovers of Cities on COVID-19 Lockdown” YouTube video (author).

In figures 17 and 18, users are reacting positively and negatively to the video, some think this is good for the city to take a break while others think it is really sad to see cities like that.

#### 4) The future of urban mobility after the pandemic | CNBC Reports.

##### Story:

Major cities around the world are studying the cities post-covid-19 from all point of views, and urban mobility and transportation is an essential part of the cities. In June 2020, CNBC’s Tom Chitty discusses how social distancing and transportations go together and what changes are needed to assure that social distancing rules (CNBC International, 2020).

##### Discourse:

This video is important because it discusses how urban and city planners enforce social distancing in mobility. Streets have to be safe; pavements should be widened to have more distance between people, low traffic neighborhood, but the most important point is that there is an over-reliance on public transportations in cities where social distancing is so hard. From here bike lanes should be added to encourage cycling and also a remarkable increase in the use of micromobility vehicles like electric scooters and electric skateboards that can also be used on the bike lane infrastructure. This report is important because it turns

the light on urban mobility during and post covid-19 pandemic, and transfer this information to many cities around the world (CNBC International, 2020).

#### Characters:

The video is addressed to urban planners, business leaders, and entrepreneurs to start this change in mobility with the help of the new technology in accordance with the health system to ensure cities come back stronger and safer than before.

#### Elements catching the attention of the audience:

This video like others has an attractive title “The future of urban mobility after the pandemic”, this title catches the attention of people used to public transportation to discover and explore how the future transportations will look like, taking into consideration health and social distancing rules to prevent density, therefore to prevent the spread of the virus.

#### The role of the audience:

This video has 50,957 views and 51 comments which shows the interaction of the audience with the video, some of them just watch but some others comment and participate in discussions presenting their opinions. In figure 19, users are discussing the video topic together.

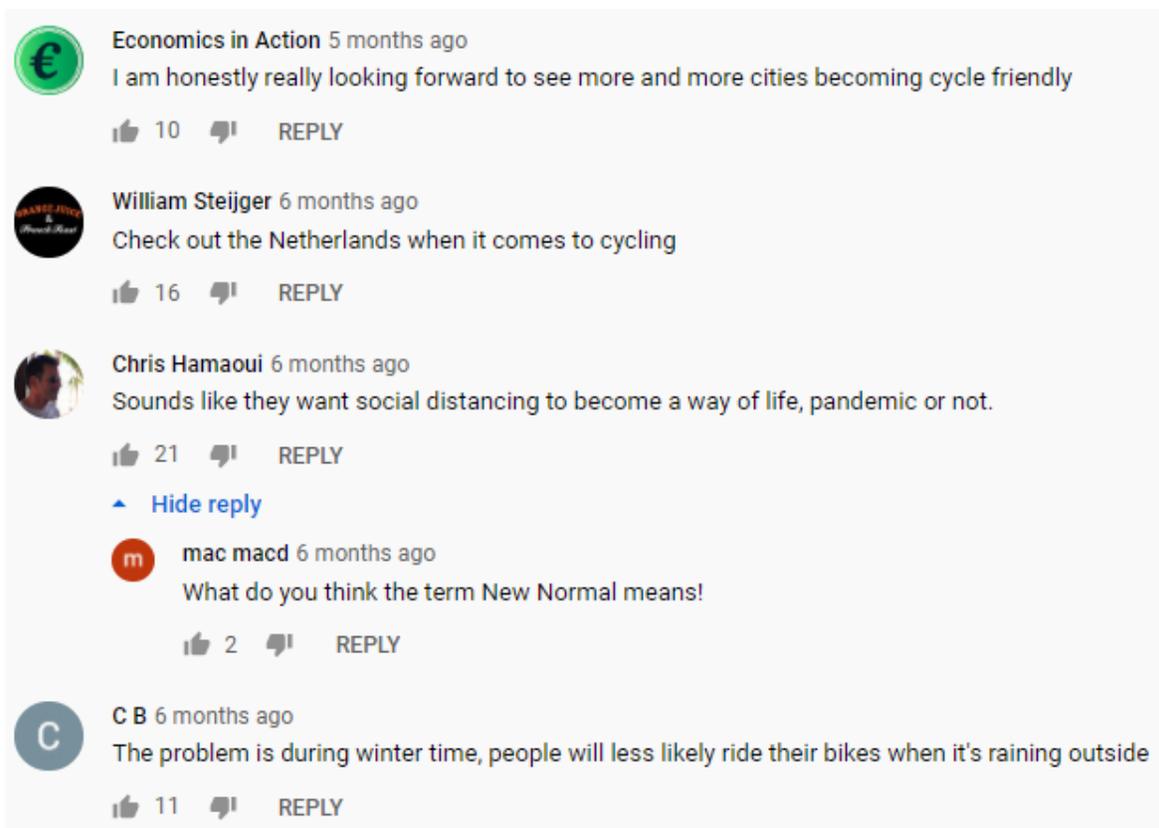


Figure 19. Screenshot of comments of the "The future of urban mobility after the pandemic | CNBC Reports" YouTube video (author).

## 5) How the Pandemic Is Changing Our Commute | WSJ

### Story:

In this video uploaded in June 2020, Jaden Urbi, a video journalist, discusses after research done, how Covid-19 is turning the public transit systems, like trains and buses highly exposed to coronavirus, into safe transit systems (Wall Street Journal, 2020).

### Discourse:

This video is important because it shows that despite the long time cities worked on public transportation to reduce cars on the roads, covid-19 came and turned daily commute to

public health risk. To fix this safety in public transportation is a must, these latter should ensure to follow some rules. Sanitization is a must, deep cleaning using UV light system, robots springing disinfectants, etc... Additionally, a temperature screening system is applied to check fevers, also the mobile reservation became a must in some transportations. But all of this won't be helpful without social distancing which is hard especially in trains because social distancing means fewer tickets which means less income to maintain the railways while on the roads social distancing in buses is easier. This can be done by expanding bus lanes, therefore more buses on the road with fewer passengers which help for better social distancing but not a perfect one. Therefore some alternatives can help people to avoid public transportation, like widening sidewalks for pedestrians and adding cycling lanes, and also the 15 minutes city that reduces the need for public transportation by reaching everything needed within a short walk from home (Wall Street Journal, 2020).

#### Characters:

The video is addressed to public transportation companies, to start and work on improving and applying some rules in public transportations in accordance with the health system to ensure cities come back stronger and safer than before. It is also addressed to urban planners and architects to work more on the concept of 15 minutes city.

#### Elements catching the attention of the audience:

This video catches the attention first by its title because people have concern about the transportation that can be a hotspot and the origin of virus transmission. Secondly, the video's discourse is so easy and simple to understand by everyone yet it is sharing very important information at the same time.

### The role of the audience:

This video has 205,867 views and 242 comments which shows the interaction of the audience with the video, some of them just watch but some others comment and participate in discussions presenting their opinions. Some comments can be related, some others can be out of topic, and some others can be critical to the video audio, this is shown in figure 20.

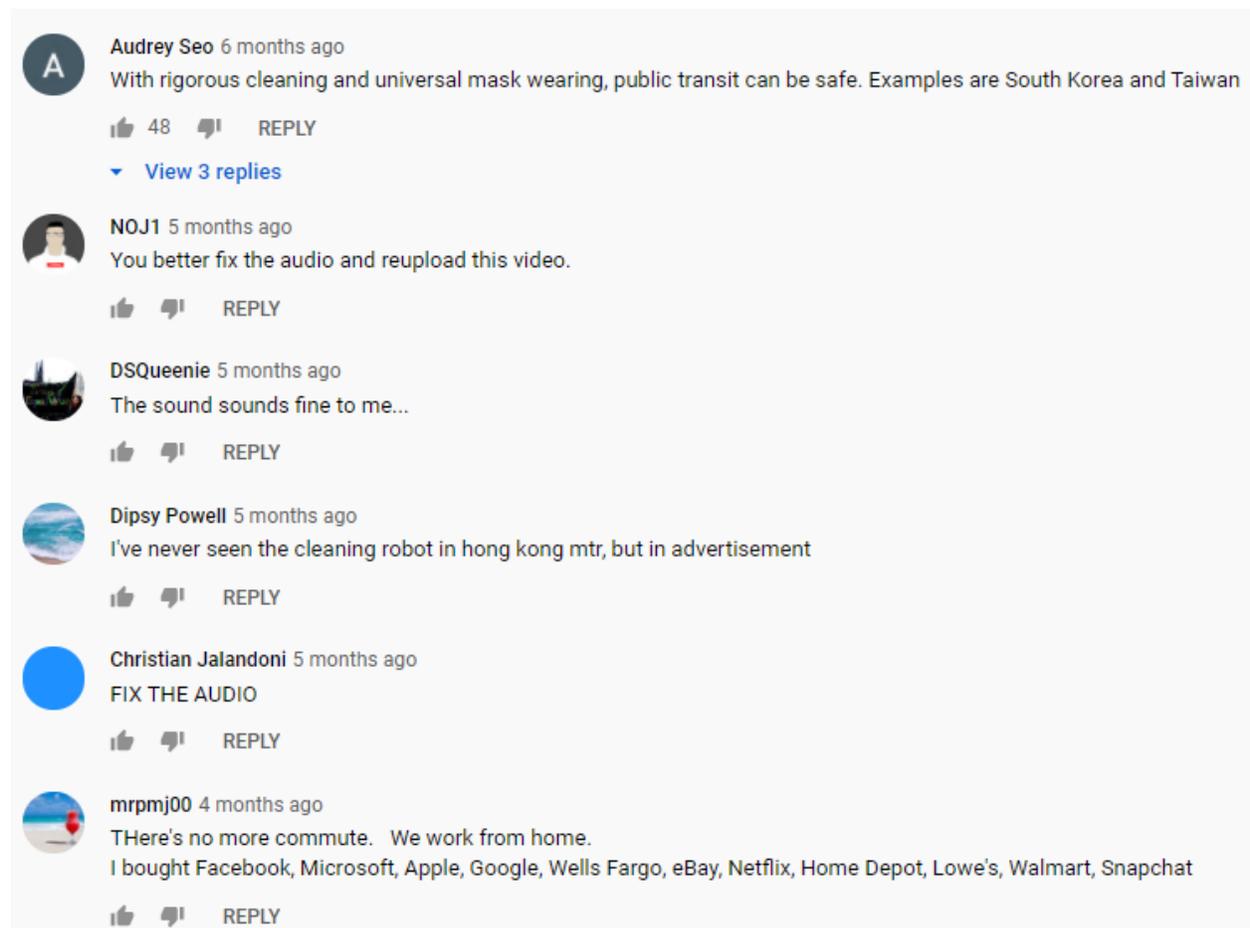


Figure 20. Screenshot of comments of the "How the Pandemic Is Changing Our Commute | WSJ" YouTube video (author).

## 4.2.2. Covid-19 and architecture

1) How covid-19 can transform the buildings where we live and work

### Story:

This video posted in December 2020, is a report done by Washington post to discuss architecture post-covid-19. The speakers in this video are expert architects: Caitlin Taylor, Steven Holl, and Amanda Carroll that are presenting the new design concepts to prevent the spread of the viruses (Washington Post, 2020).

### Discourse:

This video talks about architecture post-covid-19, architects are finding new ways to design spaces where people live, work, play during this covid-19 pandemic. Architects say that this tragedy wakes people up to changes shaping in a new way the spaces. They say that the relationship between human health and architecture is important and it should be related to nature and green spaces. Taylor presented an already done project in 2011; a hospital in Butare to reduce the transmission of airborne disease which is similar to covid-19. Some solutions presented by the experts were moving hallways corridors from the inside to the outside, having open windows in the sides of buildings for cross ventilation. An important lesson from the pandemic is to rely on the natural world, each building site is different than the other. Additionally, inside the building the design should be flexible; adjustable desks, movable walls, touchless tools (Washington Post, 2020).

### Characters:

This video is mainly addressed to architects, and designers but it is also addressed to every person interested or not since buildings are not only for architects but they are for everyone living, working, studying, playing under a roof. Therefore, it is addressed for every individual.

### Elements catching the attention of the audience:

The title always catches the attention of the audience, in this case, it is how covid-19 transform the building where we live and work. People are concerned about this topic so the title will lead them to watch the video. Additionally, the video length is 7 minutes, but by watching it, the information, the visual content, and the clear message transferred make the video real quick and easy to follow and understand.

### The role of the audience:

This video has 108,835 views and 816 comments which shows the interaction of the audience with the video, some of them just watch but some others comment and participate in discussions presenting their opinions.



Figure 21. Screenshot of comments of the “How covid-19 can transform the buildings where we live and work” YouTube video (author).



Figure 22. Screenshot of comments of the “How covid-19 can transform the buildings where we live and work” YouTube video (author).

For instance, in figure 21, the debate is going on about the concept that is applicable only for rich people, but some users are saying that this is not right, if you have education and even if not rich, these concepts can be applied. While in figure 22, other debates are going on, about the solutions, or the “new normal” concept.

## 2) How coronavirus will change architecture, design, and everyday life.

### Story:

This video posted in May 2020, is a quick interview done by the CBS news to discuss architecture and design changes. The speaker in this video is Sam Cochran, a features director at Architectural Digest and he is discussing the changes that occurred in design

because of the past pandemic and the changes of today because of Covid-19 (CBS News, 2020).

#### Discourse:

This video is very important because it shows the viewer how the cholera and tuberculosis pandemics in the past reshaped infrastructure and design of the cities and what is changing in today's pandemic. Social distancing is the first solution to prevent the spread of the covid-19 virus, from this idea, new design concepts are emerging. For example in the offices, changes are as following: adjusting seats and workstations, installing transparent shields to separate employees, improving building ventilation, having flexible offices. Safety precautions became a must not only for offices but also for all types of buildings; adjustments in floor plans are done, reducing the capacity to allow people to feel safe to inhabit and enter those spaces. Also technology will have a big role, for example, online ordering of food, of clothes using smartphones, plus in elevators instead of having normal buttons on walls, buttons will be on floor touched by foot. Additionally, spaces should be environmentally friendly not only for a better planet but also for a healthier lifestyle (CBS News, 2020).

#### Characters:

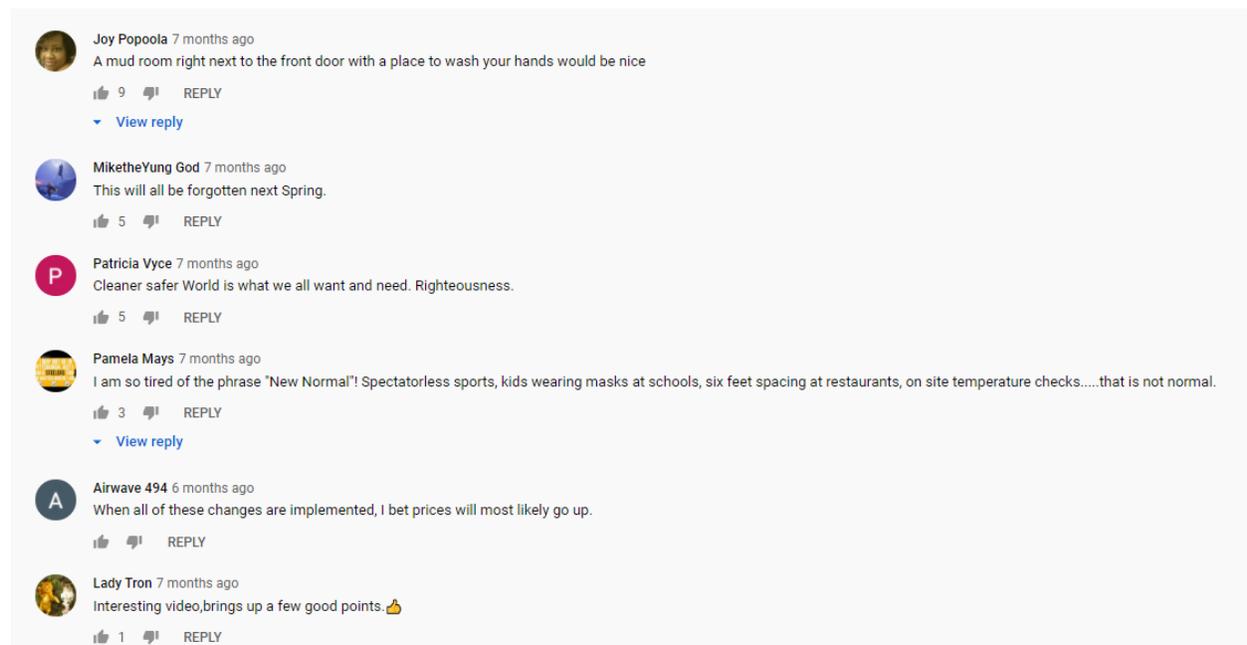
This video is addressed to architects and designers in the first place but it is also addressed to everyone inside a building: living, working, studying, or playing under a roof. Therefore, it is addressed for every individual.

#### Elements catching the attention of the audience:

This video catches the attention of the users by its title like the previous one and most of the videos because people have concern about what the spaces they live and work in will become like to be safe and prevent the spread of the virus. Also, the clear message easy to understand helps the viewer to stay interested until the last second of the video.

## The role of the audience:

This video has 15,293 views and 54 comments which shows the interaction of the audience with the video, some of them just watch but some others comment and participate in discussions presenting their opinions. Even if the number of viewers is not high like others but the video created anyway an interaction between users. For example, in figure 23, some users suggest new solutions, some others are against the “new normal” and some others are talking about the effects of these changes like the prices going up.



*Figure 23. Screenshot of comments of the “How coronavirus will change architecture, design, and everyday life” YouTube video (author).*

### 3) Watch This Time-Lapse of China Building a Coronavirus Hospital in Two Weeks.

#### Story:

There is no speaker in this video uploaded in January 2020, but the video itself is very important because it shows how in China the origin of the virus, a huge coronavirus hospital was built only in two weeks (VICE News, 2020).

#### Discourse:

Since there is no speaker in this video, the visual content itself is the important information, it is fascinating. Also, some written notes are helping to explain briefly the video. This latter is a timelapse of the construction process of the hospital in China. The construction crews are racing to build as fast as they can hospital to treat coronavirus patients, it is obvious in the video that the site is full of workers, full of cranes, full of concrete mixers. Construction work is going on during day and night, non-stop work is happening; ground digging, plumbing, reinforced concrete slab construction, walls and opening construction, etc. Everything in the construction process was going on in a very fast and fascinating way (VICE News, 2020).

#### Characters:

This video is addressed to construction workers, architects, civil engineers, and also it can be addressed to governments as an example of what type of work and construction can be done in a short period during a critical and urgent period.

#### Elements catching the attention of the audience:

The title itself is one of the most attractive titles, building a hospital in two weeks usually is not something normal, it is a fascinating process pushing the boundaries in the construction

industry. Also, the duration of the video of 1 minute and 10 seconds makes the user curious to watch this whole process in a fast way.

### The role of the audience:

This video has 1,845,517 views and 3,322 comments which shows the high interaction of the audience with the video, some of them just watch but some others comment and participate in discussions presenting their opinions.

The comments under this video were various and different, but the most frequent comment was about the capacity of the Chinese to build this huge hospital in two weeks while in some other cities or countries, a simple renovation or a simple pipe fixation takes time as shown in figure 24.

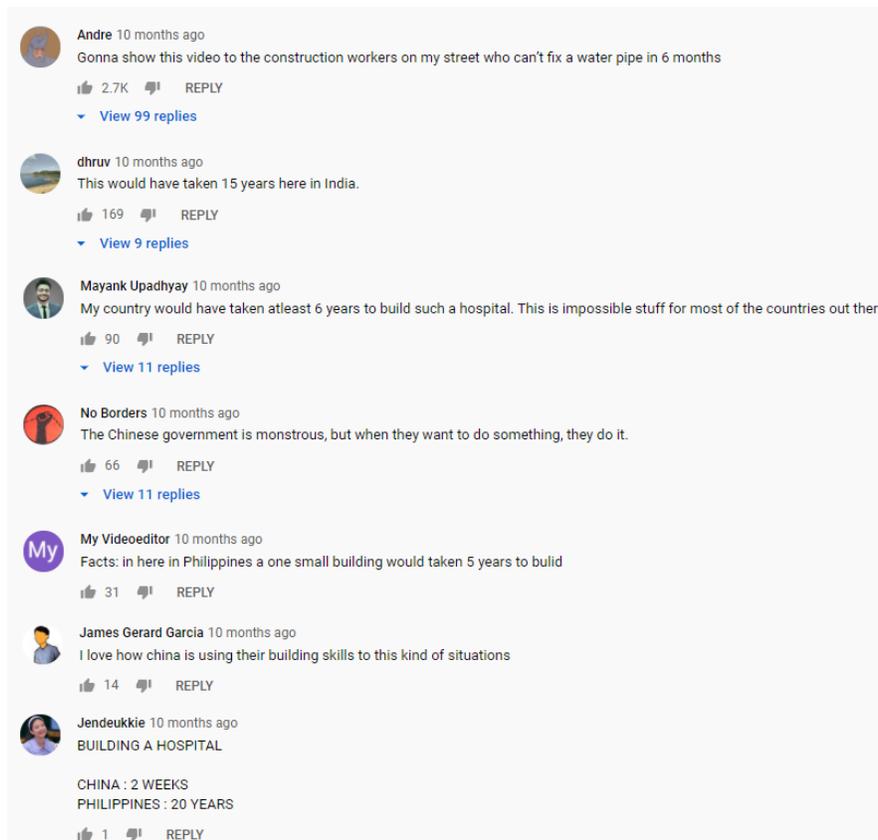


Figure 24. Screenshot of comments of the “Watch This Time-Lapse of China Building a Coronavirus Hospital in Two Weeks.” YouTube video (author).

#### 4) How China Built a Hospital in 10 Days.

##### Story:

This video uploaded in February 2020, is prepared by Wendover Productions that explain how our world works from A to Z to keep us updated on news and to understand them. In this video, they are explaining how the coronavirus hospital in China was built in 10 days only (Wendover Production, 2020).

##### Discourse:

The video is important because it explains very well the steps of the construction, it explains how the virus started and how the transmission was fast and causing a lot of harsh symptoms and sometimes death. Hospitals in China were overwhelmed by patients, which called for the construction of a new hospital able to treat 1000 patients at once. This was the case in 2003, when SARS similar to covid-19 appeared and the Chinese government built a new hospital in 6 days only which was a massive success. Therefore for coronavirus hospital same steps were followed, a necessary step was to find an appropriate land: an open field easy to access and far from the center of the city to stay away from dense areas. After that, leveling the ground happened, followed by the construction of building foundations, and sitting up utilities like sewage, water, electricity, and internet. But the most important part was the construction of the building itself using the fastest way to build: the modular construction based on prefabricated elements shipped to the construction site and put together, this technique helps to build large buildings in lower cost and less time. Additionally, all unique aspects and designs respecting the quarantine concept were followed inside the rooms' designs (Wendover Production, 2020).

### Characters:

This video, similar to the previous one, is addressed to construction workers, architects, civil engineers, and also it can be addressed to governments as an example of what type of work and construction can be done in a short period during a critical and urgent period.

### Elements catching the attention of the audience:

The title of building a hospital in 10 days in China catches the attention of the audience easily, especially architects and civil engineers, it is also a fascinating process pushing the boundaries in the construction industry. Even if the video is of 10 minutes but each minute is very important in explaining and passing the needed information to the viewers and simply and clearly so every viewer can understand.

### The role of the audience:

This video has 2,605,839 views and 11,076 comments which shows the high interaction of the audience with the video, some of them just watch but some others comment and participate in discussions presenting their opinions. Some comments were giving credits to the Chinese government and some others were surprised by this construction in a fast way and discussing it as shown in figure 25.

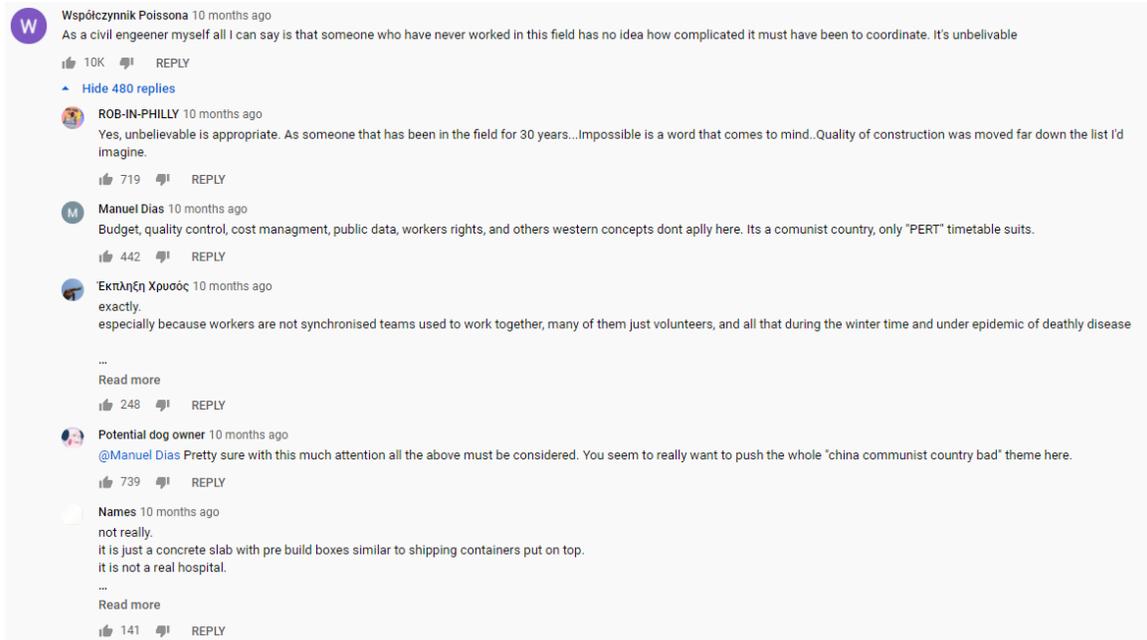


Figure 25. Screenshot of comments of the “How China Built a Hospital in 10 Days” YouTube video (author).

## 5) Clearer water, cleaner air: the environmental effects of coronavirus.

### Story:

There is no speaker in this video uploaded in March 2020, but the video itself is very important because it shows how the coronavirus pandemic had some advantages and positive effects on the environment in cities when people across the world were under lockdown and isolated (France 24 English, 2020).

### Discourse:

This video has an important message, it shows how cities became cleaner and environmentally friendly because of the pandemic. Since there is no speaker, visual content and written notes are enough to pass the message. In Venice, waters in the canals became crystal clear under lockdown because usually this city is crowded with tourists who normally

swarm the canals but not during the lockdown therefore the motorboats' pollution has vastly decreased which is unusual. While in other countries, streets are empty from people and cars, factories are closed, flights are grounded which lead to a significant drop in air pollution. Unfortunately, these environmental benefits are not for the long term, once cities and factories open again these benefits will decrease (France 24 English, 2020).

#### Characters:

This video is addressed to green-minded people, it is also addressed to urban planners and every person to see how cities are taking a break from pollution and help if possible in a way to have these benefits for the long term.

#### Elements catching the attention of the audience:

Like previous videos, the title is important in catching the attention of the audience since this latter thought that coronavirus doesn't have any positive effect. While the title of the environmental effects of coronavirus push the users to watch the video and explore those effects.

#### The role of the audience:

This video has 1,927,543 views and 4,564 comments which shows the high interaction of the audience with the video, some of them just watch but some others comment and participate in discussions presenting their opinions. In figure 26, users commenting were discussing the effects and how people should learn from that to think more about the environment.

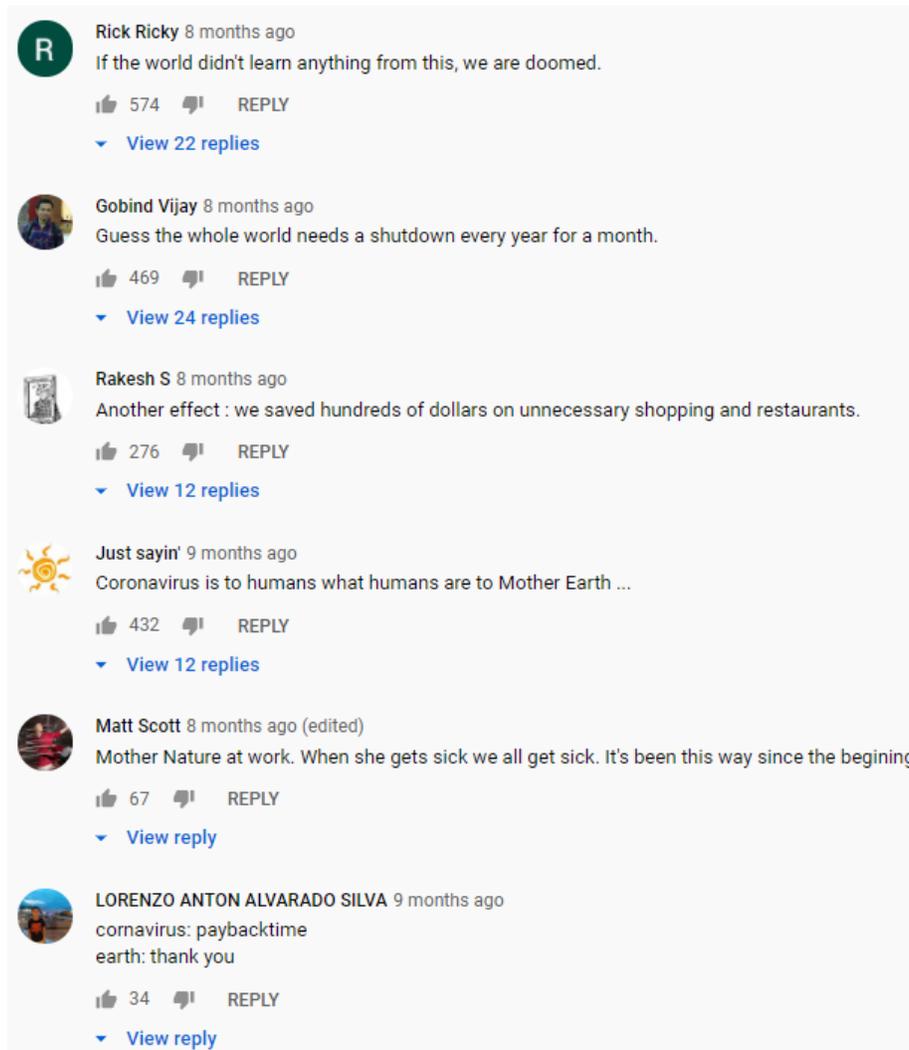


Figure 26. Screenshot of comments of the “Clearer water, cleaner air: the environmental effects of coronavirus” YouTube video (author).

### 4.2.3. Virtual reality 360 Travel

1) Saint Petersburg, Russia. Virtual travel. Aerial 360 video in 10K.

#### Story:

There is no speaker in this video uploaded in November 2020, but the video itself is very important because it shows Saint Petersburg, a city in Russia in a 360-degree video, focusing on its streets and architectural monuments (AirPano VR, 2020).

### Discourse:

This video is important because it shows Saint Petersburg city and its landmarks from different angles. It shows some aerial views of the city streets and buildings, it also shows a human point of view of architectural monuments, buildings, raising bridges, rivers, canals, palaces, gardens, and landscape. But what distinguishes this video, is the capacity of the user to turn around in every direction around him. It is more like a virtual reality video, where users at home can discover new cities, without really traveling, it is more like virtual traveling. This video is very functional and practical especially during the covid-19 pandemic, since because of the lockdown, flights were grounded (AirPano VR, 2020).

### Characters:

This video is addressed to users interested in Saint Petersburg city and architecture, it is also addressed to users under lockdown, isolated to discover new cities around the world.

### Elements catching the attention of the audience:

Like previous videos, the title is important in catching the attention of the audience since it includes the “virtual travel” and the “360” words. These words are captivating because this is considered more or less a new concept which leads to more user interaction.

### The role of the audience:

This video has 55,031 views and 44 comments which shows the interaction of the audience with the video, some of them just watch but some others comment and participate in discussions presenting their opinions. In figure 27, users commenting were enjoying the experience especially during quarantine, they agree that this is a virtual travel process, they felt being tourists.

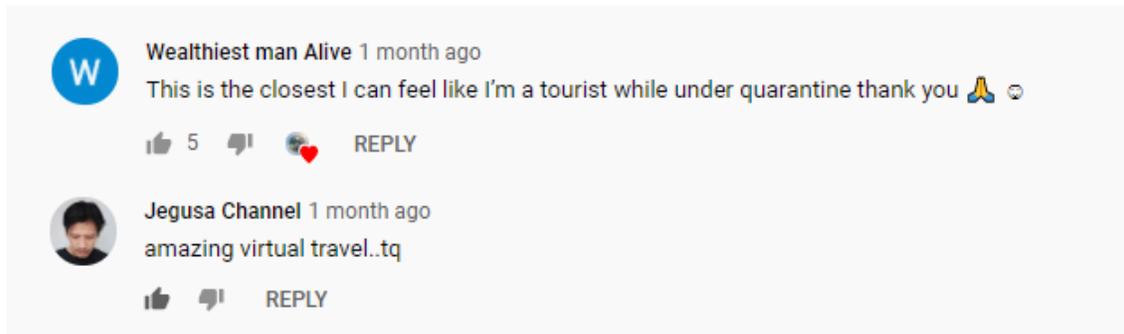


Figure 27. Screenshot of comments of the “Saint Petersburg, Russia. Virtual travel. Aerial 360 video in 10K” YouTube video (author).

2) 360 video, Shanghai, China. The most populous city in the world. 8K aerial video.

#### Story:

This video uploaded in May 2018, has a speaker we can't see, the speaker is explaining about Shanghai city in China while the 360 degrees video is showing at the same time the city from above with different directions as the user prefers (AirPano VR, 2018).

#### Discourse:

This video is important because it shows Shanghai city, the biggest city on the whole planet from different angles, it shows some aerial views of the city's landmarks and attractions.

Additionally, the speaker plays an important role in explaining the video while watching it and discovering the different views. Shanghai is divided into two parts because of the Huangpu river; a historical part with traditional architecture and a super modern part. The video also shows the streets of the city during the spring festival or the Chinese New Year, it shows the streets, the architecture of the buildings, the sky rises with the high Shanghai tower; the second-highest building in the world. Also, the video lets the user explore the river, the bridges, the parks, the basilicas, the temples and the historical markets, in addition

to the Waitan embankment or the “museum of world architecture” that preserve 52 buildings of different style: classicism, gothic, neoclassicism, baroque, beaux-arts and art-deco (AirPano VR, 2018).

### Characters:

This video is addressed to users interested in Shanghai city and architecture, it is also addressed to users under lockdown, isolated to discover new cities around the world also to architects unable to travel and discover this city.

### Elements catching the attention of the audience:

Like previous videos, the title is important in catching the attention of the audience since it includes the “360” word which is captivating which pushes users to watch and discover while indirectly interacting with the city.

### The role of the audience:

This video has 218,654 views and 70 comments which shows the interaction of the audience with the video, some of them just watch but some others comment and participate in discussions presenting their opinions. In figure 28, the user’s comment shows that this latter explored the sense of traveling by watching the video from home without real traveling expenses and this is very useful especially during the covid-19 pandemic.

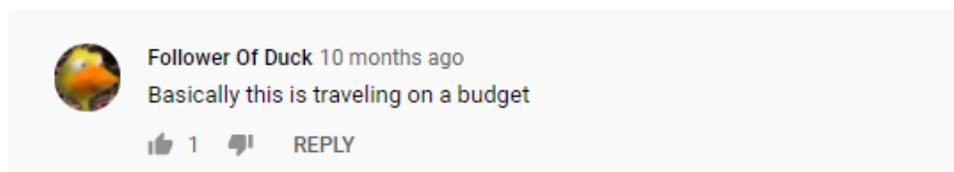


Figure 28. Screenshot of comments of the “360 video, Shanghai, China. The most populous city in the world. 8K aerial video” YouTube video (author).

3) 360° Video: Buckingham Palace Tour - BBC London.

Story:

This video uploaded in July 2018, doesn't have a speaker, but the video itself with the visual content is important because it shows the user the Buckingham palace with some written notes that help him to understand (BBC London, 2018).

Discourse:

The video shows the inside architecture and design of different rooms of the palace. The majestic stairs and gold handrails at the grand entrance, the green drawing room with the royal chandeliers handled from the roof, the fascinating roof, the furniture are all shown in the video from all the angles. The video shows many rooms in the palace, with a royal and majestic design Each room of the palace is a masterpiece itself and a very interesting space every architect and designer dreams to visit and admire (BBC London, 2018).

Characters:

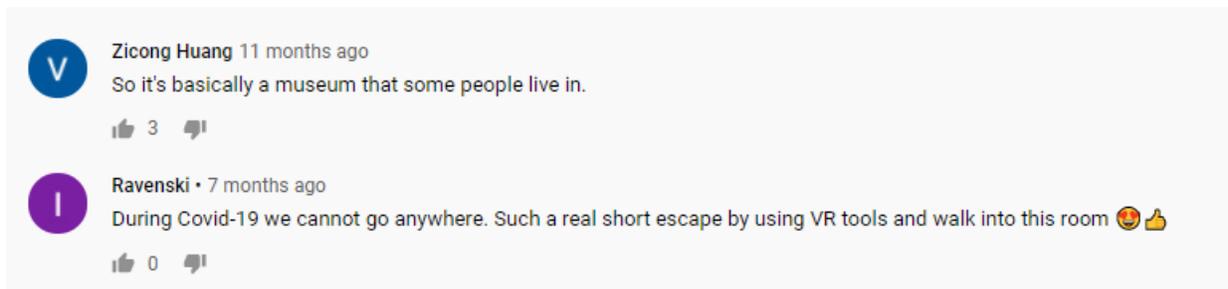
This video is addressed to users interested in royal architecture, mainly architects and designers to discover the majestcity of the palace rooms and design.

Elements catching the attention of the audience:

The title is important in catching the attention of the audience since it includes the "360" word which is captivating which pushes users to watch and discover the palace which is not a place easy to visit every day.

### The role of the audience:

This video has 1,386,726 views and 733 comments which shows the interaction of the audience with the video, some of them just watch but some others comment and participate in discussions presenting their opinions. In figure 29, the first user's comment shows that he was fascinated by the design of the palace as if it was a museum where people live, while the other user's comment shows his appreciation toward this video since during covid-19 lockdown people are not allowed to go out, so he described the video as "a real short escape".



*Figure 29. Screenshot of comments of the "360° Video: Buckingham Palace Tour - BBC London" YouTube video (author).*

4) New York, USA. City of Skyscrapers. 360 8K aerial video.

### Story:

This video uploaded in September 2018, has a speaker we can't see, the speaker is explaining about New York City in the USA while the 360 degrees video is showing at the same time the city from above with different directions as the user prefers (AirPano VR, 2018).

### Discourse:

This video is important because it shows Manhattan city, the most densely populated city in New York and the USA from different angles, it shows some aerial views of the city's landmarks and attractions.

Additionally, the speaker plays an important role in explaining the video and sharing some related information while watching and discovering the different views of the city. The video shows all the landmarks of the city from above, it shows the streets, the buildings and organization, and the linearity of the city. Additionally, it shows the grand central park, one of the largest parks in the city with the building and the skyscrapers all around, it also presents an aerial view above the river that shows the city and its building in an amazing way. In the video, users watching it can visit the downtown of Manhattan where the most known skyscrapers exist with a unique random arrangement of streets, they can also see the Brooklyn Bridge and the famous times square area, the symbol of New York City (AirPano VR, 2018).

#### Characters:

This video is addressed to users interested in New York City especially in Manhattan and its architecture, it is also addressed to users under lockdown, isolated to discover new cities around the world, and to architects unable to travel to discover this city nowadays.

#### Elements catching the attention of the audience:

Like previous videos, the title is important in catching the attention of the audience since it includes the “360” word which is captivating which pushes users to watch and discover while indirectly interacting with the city and the video.

#### The role of the audience:

This video has 638,185 views and 111 comments which shows the interaction of the audience with the video, some of them just watch but some others comment and participate in discussions presenting their opinions. In figure 30, the users’ comments show how satisfied they were with the video and with the visit of the city.



Figure 30. Screenshot of comments of the “New York, USA. City of Skyscrapers. 360 8K aerial video” YouTube video (author).

## 5) 360 4K video: Unique Bolshoi Theatre VR tour.

### Story:

This video uploaded in December 2016, doesn't have a speaker, but the video itself with the visual content is important because it shows the user watching it, the Bolshoi Theatre in the city of Moscow, in Russia (RT, 2016).

### Discourse:

The video shows the architecture of the historical theatre from outside with its frontal piazza, then it moves to the inside to focus on the inner spaces with their architecture and design. The stairs, the handrail, the curtains, the tilings, the roof, the chandeliers, the

furniture of the spaces are clearly shown in this video which allows the viewer to admire and take a full look at everything from any point of view. Then the video moves to the theatre itself, the main room of this historical building where it shows the user the majestic pace with its unique and majestic design; elegant columns decorated with gold, well organized and charming chairs, the huge chandelier, and the curtain... everything shown in the video is amazingly charming. Everything in this building is a masterpiece itself and a very interesting space every architect and designer dreams to visit and admire (RT, 2016).

### Characters:

This video is addressed to users interested in majestic architecture, mainly architects and designers to discover the charm of the spaces and their design.

### Elements catching the attention of the audience:

The title is important in catching the attention of the audience since it includes the “360” word which is captivating which pushes users to watch and discover the well-known theatre.

### The role of the audience:

This video has 98,444 views and 24 comments which shows the interaction of the audience with the video, some of them just watch but some others comment and participate in discussions presenting their opinions. In figure 31, users comment happily after watching the video and exploring the theatre, excited to visit it someday and excited for more similar videos because as a user said “I doubt I’ll ever see them in person”, so these types of videos are helping to discover historical monuments like this while sitting at home.

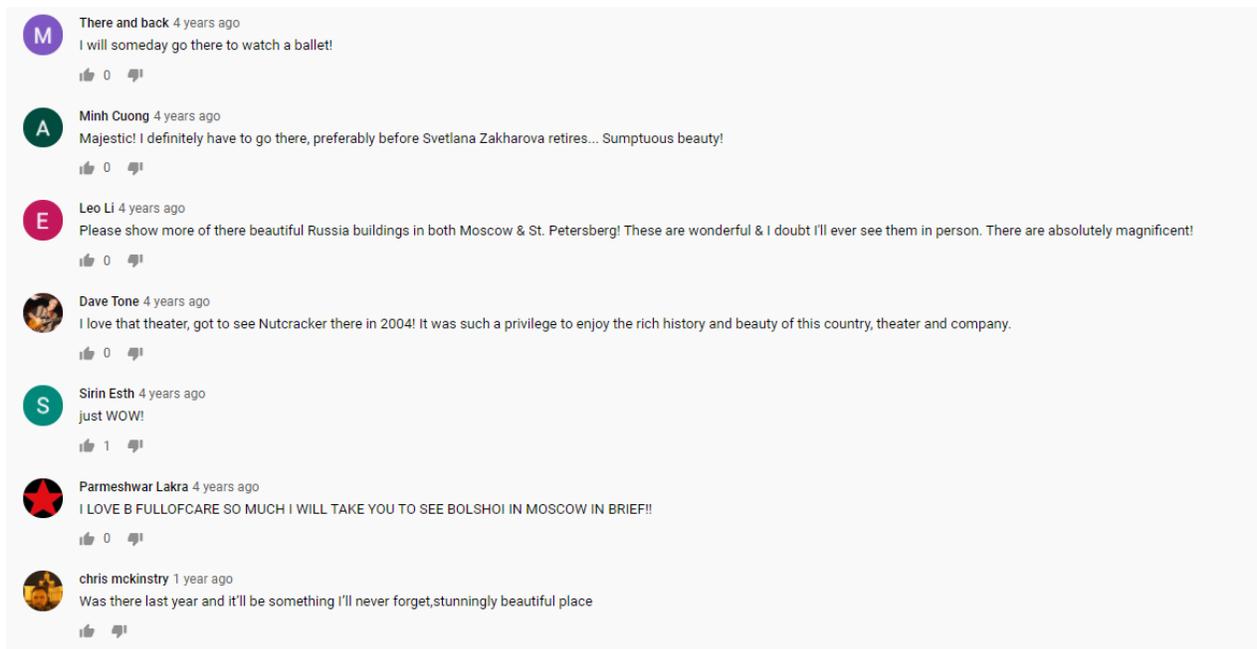


Figure 31. Screenshot of comments of the “360 4K video: Unique Bolshoi Theatre VR tour” YouTube video (author).

## 4.3. Second Category – Unverified Channels

### 4.3.1. Covid-19 and the City

1) COVID 2025: How COVID-19 Will Change Cities: Prof. Luis Bettencourt.

#### Story:

This video uploaded in July 2020, is a report presented by the urban science researcher Luis Bettencourt, talking about how the covid-19 pandemic is changing the cities and improving the urban life for the future 5 years (The University of Chicago, 2020).

### Discourse:

This video is important because it shows how the pandemic affected the city and how it helps the city to be ready in the future. This videos shows how the pandemic affected the societies differently; when the virus entered a large city, the spread was much faster than in small cities. From here, each city should have good knowledge and policy to respond to pandemics and to be ready for future similar cases before they become epidemics in the future. In a city everything is interdependent, therefore everything is being disrupted by the pandemic, so to face this the solution is to disassemble and reduce the complexity of cities and at the same time to keep in mind the act of creating a better and healthier life for citizens. This pandemic has helped to know more about societies and cities; how they work, what makes them vulnerable, and what makes them ready. Therefore, the covid-19 pandemic is a learning event for cities to do much better in the future (The University of Chicago, 2020).

### Characters:

This video is addressed to every citizen and specifically to urban planners and designers to know how to design cities to be ready for future similar pandemics.

### Elements catching the attention of the audience:

The title including “COVID 2025 “ is very unique, it makes the users very curious to know more about it and its discrete meaning.

### The role of the audience:

This video has 24,171 views and 27 comments which shows the interaction of the audience with the video, some of them just watch but some others comment and participate in discussions presenting their opinions. In figures 32 and 33, users are criticizing the concept of 2025 as if the act of expanding and not ending the virus is intended by “evil” governments and politicians.

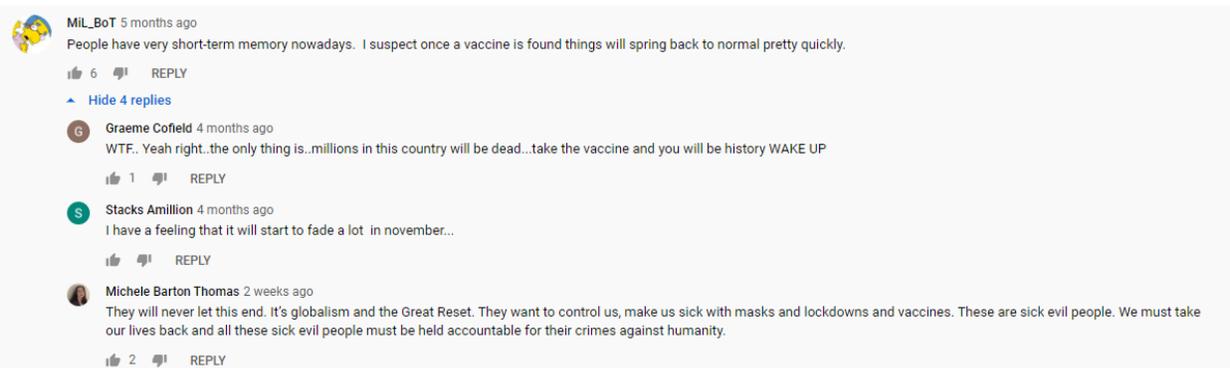


Figure 32. Screenshot of comments of the “COVID 2025: How COVID-19 Will Change Cities: Prof. Luis Bettencourt” YouTube video (author).

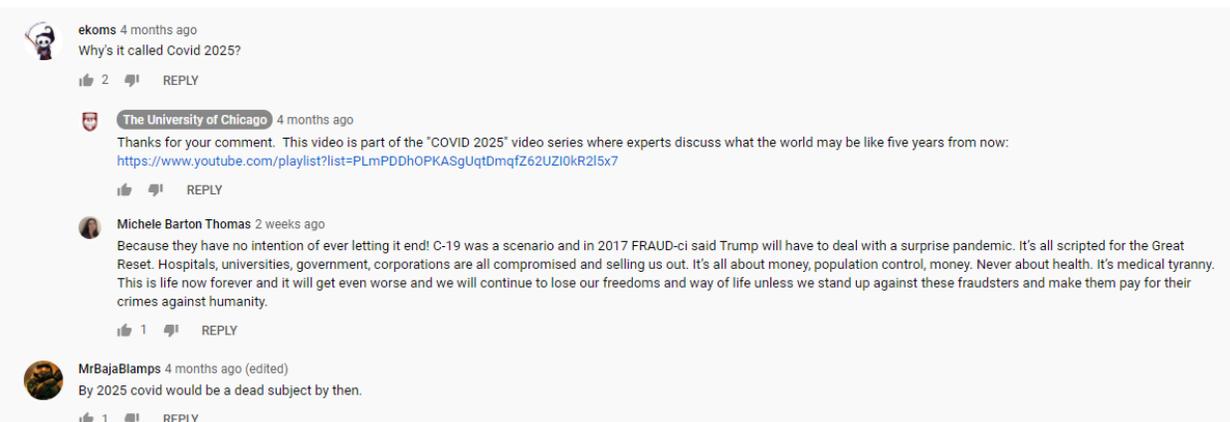


Figure 33. Screenshot of comments of the “COVID 2025: How COVID-19 Will Change Cities: Prof. Luis Bettencourt” YouTube video (author).

2) Should cities keep open streets after the pandemic?

### Story:

The speaker Dave Amos is an urban researcher, he’s presenting the report in May 2020, of the city beautiful channel dedicated to inform people about cities and city planning (City Beautiful, 2020).

### Discourse:

This video is important because it explains the importance of open streets during pandemics and even for the long term. Studies have shown that the spread of the virus outside is much lower than inside, therefore going for a walk is considered a safe activity to do during lockdown under the condition of social distancing which is not always possible. From this point the open streets concept appeared which is a concept where streets are open for pedestrians and cyclists and closed to cars except for emergency cars and delivery cars, this idea helps for an easier social distancing act not only during a pandemic but for a long term. This concept is easy to install and cheap to maintain, it helps to implement pedestrian malls as public spaces, it is a chance to encourage outdoor restaurants instead of parking lots and most importantly this concept helps for a better environment: cleaner air and healthier life (City Beautiful, 2020).

### Characters:

This video is addressed to urban planners and designers, also to mayors responsible for cities to know how to cooperate in designing cities with open streets for healthier cities and living environment.

### Elements catching the attention of the audience:

Similar to other Youtube videos, the title is the main element to catch the attention of the audience, since it has the concept of “open streets” even post-pandemic.

### The role of the audience:

This video has 51,849 views and 426 comments which shows the interaction of the audience with the video, some of them just watch but some others comment and participate in discussions presenting their opinions. In figure 34, the user is surprised how before the pandemic, things used to be “unfeasible” while now because of the urgent situation

everything is being feasible easily with some other users answering. While in figure 35, other users are discussing the concept of open streets, and some are encouraging the idea.

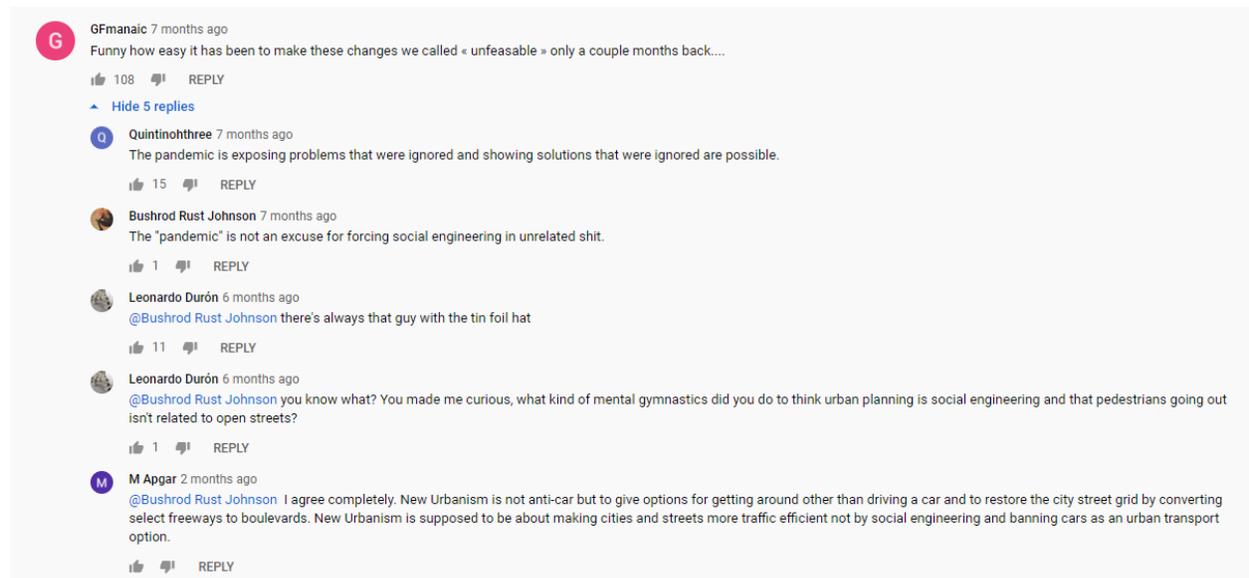


Figure 34. Screenshot of comments of the “Should cities keep open streets after the pandemic?” YouTube video (author).

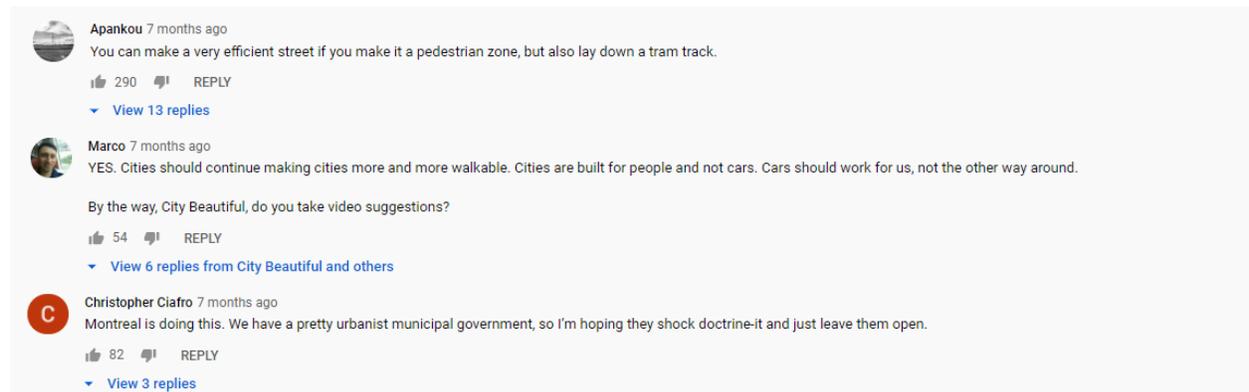


Figure 35. Screenshot of comments of the “Should cities keep open streets after the pandemic?” YouTube video (author).

3) "City of Silence" 4K - Warsaw during COVID-19 pandemic.

#### Story:

There is no speaker in this video but the video itself is representing a very important message, it is showing how Warsaw, the capital of Poland, which is usually full of life and dynamism, in March 2020 is silent and empty because of the covid-19 pandemic (Damian Poplawski, 2020).

#### Discourse:

Since this video has no speaker, it has only visual content of the city that shows how Warsaw city is facing this pandemic by doing social isolation and self-quarantine. This video is important because it shows the people how the city is empty, the streets are empty; no cars no pedestrians. It also shows how all of the shops are closed and the public piazzas are empty. It is showing how Warsaw City has changed into a silent city because of this pandemic (Damian Poplawski, 2020).

#### Characters:

The video is mostly addressed to citizens or people interested in Warsaw city, but it is also a very useful video for every person interested in cities during covid-19 in general to see how these latter are changing and transforming into empty cities. Mainly, architects and urban planners have the curiosity to stay updated on what is happening around the world to discover appropriate solutions and design concepts to face the virus.

#### Elements catching the attention of the audience:

The title of the video is important "Warsaw, City of Silence", since Warsaw is the capital of Poland and it is a city of silence, two opposite words together catch the attention of the users.

Additionally the chosen song “Last Goodbye feat. Danica Dora” goes very well with the video’s concept to show how the city is empty as if people have left it.

### The role of the audience:

This video has 605,755 views and 505 comments, which shows the high interaction of the audience with the video, some of them just watch but some others comment and participate in discussions presenting their opinions. In figure 36, users are appreciating how Poland is taking full precautions to prevent the spread of the virus.



Figure 36. Screenshot of comments of the ““City of Silence” 4K - Warsaw during COVID-19 pandemic” YouTube video (author).

#### 4) COVID-19 and the future of cities.

##### Story:

This video uploaded in March 2020, is a zoom interview between Stephen Engblom head of Global Cities at AECOM, and Peter Murray discussing how cities are facing the pandemic and the effect the virus is leaving on urban living (New London Architecture, 2020).

##### Discourse:

The video is important because the speaker talks about how cities should learn from this pandemic to be ready for the future, and become the solution and instead of being the problem. Engineers and cities' designers always help to solve pandemics and to create a healthy civic environment. Pandemics lead to having better cities, more equal cities, and more generous cities, and during covid-19 the technology helped the city to be more generous and caring by creating online support groups to support the local community and to help the city communicate with its citizens. Cities should lobby for themselves for a better economy, citizens should support and buy local, in that case when cities become capable of themselves economically and have equity, they become the solution to the problem and not the opposite (New London Architecture, 2020).

##### Characters:

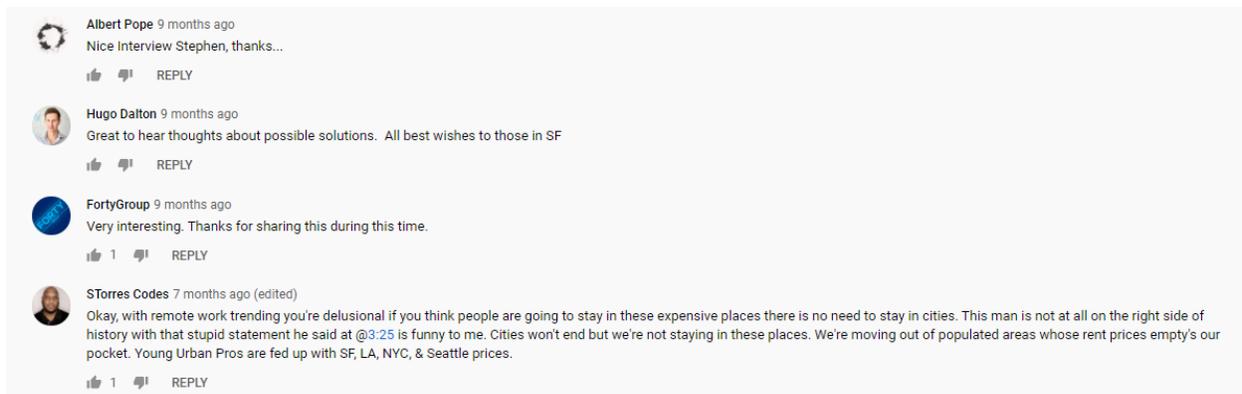
The video is mostly addressed to citizens, city mayors, and designers because the latter can change and transform the city by design and by daily activities to better, healthier, and independent cities able to face any type of pandemic.

##### Elements catching the attention of the audience:

As in previous videos, the title is catching, since it includes "covid-19" and the "future of cities", people are interested to know more about the hidden future therefore they watch the video.

### The role of the audience:

This video has 15,187 views and 7 comments, which shows that there is an interaction of the audience with the video, some of them just watch but some others in this case they are only 7, comment and participate in discussions presenting their opinions. In figure 37, the first 3 users were interested in the video but the last user was criticizing the idea presented in the video.



*Figure 37. Screenshot of comments of the “COVID-19 and the future of cities” YouTube video (author).*

## 5) Creating Safe Public Spaces in an Age of Pandemic.

### Story:

The speaker in this video made in May 2020, is Justin Hollander, a professor of urban and environmental policy and planning at Tufts University and he is discussing how parks can help to prevent the spread of covid-19 and helps for better health in general (Tufts University, 2020).

### Discourse:

This video shows the importance of parks. Since public spaces in cities are affected by the pandemic because of the density they hold which is the main factor of the virus spread, public spaces design should be different with continuous social distances between people. This is difficult to apply so parks are the solution, where even if crowded, people can spread easily -and easier than in public spaces like piazzas- which can reduce the spread of the covid-19 virus (Tufts University, 2020).

### Characters:

The video is addressed to urban planners, urban planners in their city design can consider more the importance of parks in the cities rather than focusing on squares and piazzas.

### Elements catching the attention of the audience:

As in previous videos, the title is catching, because public spaces are not safe anymore so the title “creating safe public spaces” catches the attention of the users. Also, while watching the video, the music in the background and the videos and photos passing while the speaker is talking are interesting and make the user more focused on the topic.

### The role of the audience:

This video has 4,578 views and only 3 comments, which shows that there is a shy interaction with the video yet it gives useful information. In figure 38, the only three comments are not related to the video but anyway they show people interacting.

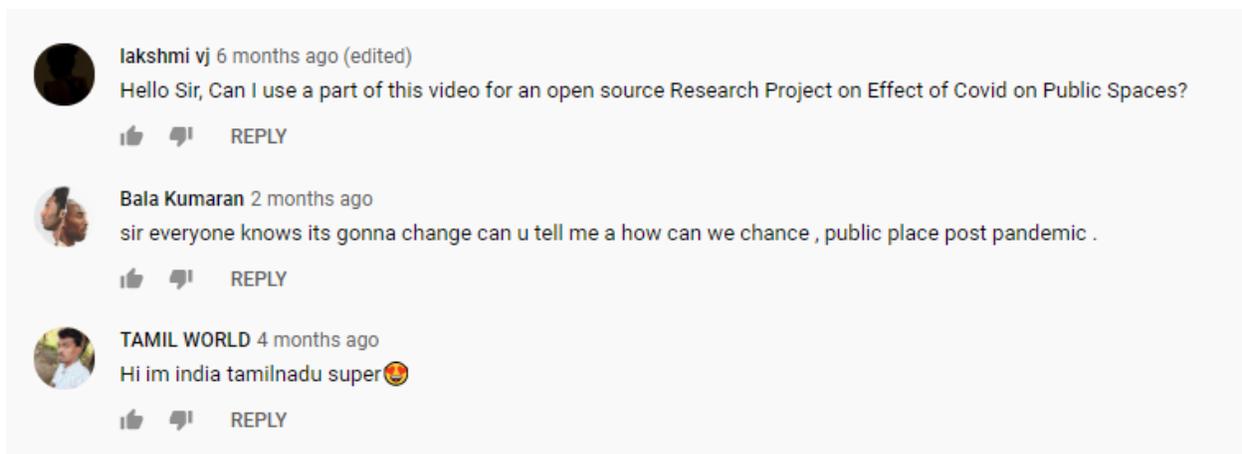


Figure 38. Screenshot of comments of the “Creating Safe Public Spaces in an Age of Pandemic” YouTube video (author).

#### 4.3.2. Covid-19 and architecture

1) How does the Corona pandemic affect architectural spaces?

##### Story:

The speaker in this video uploaded in April 2020, is unknown but the report presented has important references like TED, ellentube, Cambridge, Vice, and mineable. This video focuses on the role of the architect during the covid-19 pandemic and for the future (GH Tutorials, 2020).

##### Discourse:

This video shows how the design of spaces could affect people living there during pandemics and how it can help to increase or decrease the spread of the virus. Until the vaccines are out, architects are responsible to create safe spaces for individuals, their role is to change design to a distance-friendly design where people can continue their life without direct contact.

People have to adapt to the new design of spaces, especially public spaces like entrance to doorways, elevators, waiting lines in shops, public transportations, pools, barbershops, massage places, etc all of these previous places have completely failed in preventing the spread of the virus. Therefore in addition to marking zones, protective layers, and drawings a flexibility in design is essential to help to reduce the spread. For example, social distancing, path crossing reduction in public spaces, isolation zones, new social places without touching each other. This shift in designs could help to face the covid-19 virus and to get ready for future diseases (GH Tutorials, 2020).

#### Characters:

The video is addressed to architects to know how important their role is, much more similar to the importance of vaccine.

#### Elements catching the attention of the audience:

The title of the video is the first element that catches the attention, and after that while watching the video, the visual content; the videos, the photos related to the information makes the viewer more interested.

#### The role of the audience:

This video has 4,352 views and only 7 comments, which shows that there is a shy interaction with the video yet it gives useful information. In figure 39, the first comment is done by a user who is an architecture student who's working on the topic and was inspired by the video which is an important point to mention. While the other comments are discussing the topic giving their personal opinion.

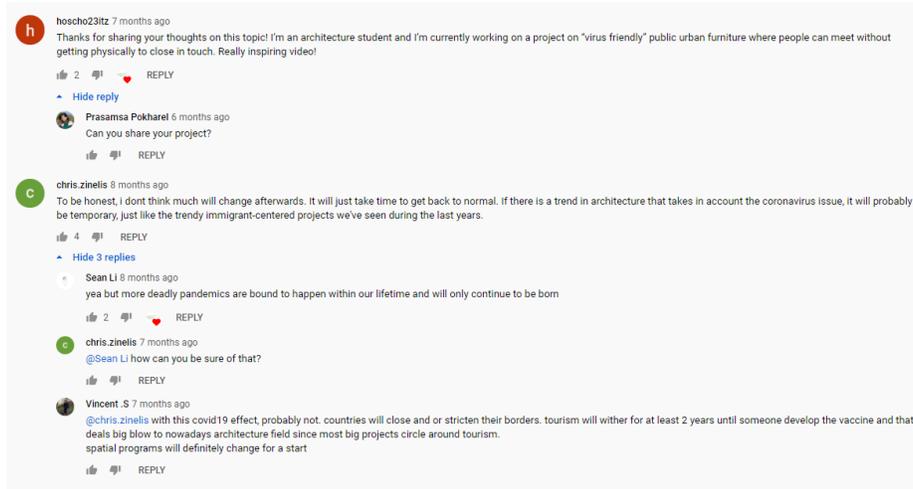


Figure 39. Screenshot of comments of the “How does the Corona pandemic affect architectural spaces?” YouTube video (author).

## 2) Documentary: Pandemic Architecture EP.1 - Design Concepts | What can architecture do for our health?

### Story:

The speaker of this video uploaded in April 2020, is named Alexy and he is an architectural designer and he is explaining the need to change designs for a future where pandemics could be our new normal (Days in the Dream, 2020).

### Discourse:

This video is important to watch because it makes architects rethink about the planning of the city, the facilities, the houses, and apartments and keep in mind future emergencies. The speaker presented many ideas for design like the in and out spaces for example a green patio inside the house that maintain health, a shower next to the entrance to clean up before and after going out, the use of affordable materials like prefabricated design for lower costs and global use, touchless and sustainable design, contemporary architecture, the gardens of the house to have your food and the flexible and adaptable design by using movable joints. These points are features and concepts easy to apply, therefore architects should consider them to

change people's behaviors and improve their health and habit during the covid-19 pandemic and post-covid-19 period (Days in the Dream, 2020).

### Characters:

The video is addressed to architects and designers to consider some concepts and features in their design for better health.

### Elements catching the attention of the audience:

The “pandemic architecture” title of the video is the first element that catches the attention, and after that, while watching the video, how the speaker presents the concepts and how he explains them makes the video interesting.

### The role of the audience:

This video has only 2,735 views and 19 comments, which shows that there is a shy interaction with the video yet it gives very useful information for architects. In figure 40, the comments show that users liked the video and are excited for the next part of it. Also, in figure 41, 3 users commented that the video was useful for their thesis which is the objective of the video, to transfer important and useful information and for the viewers.

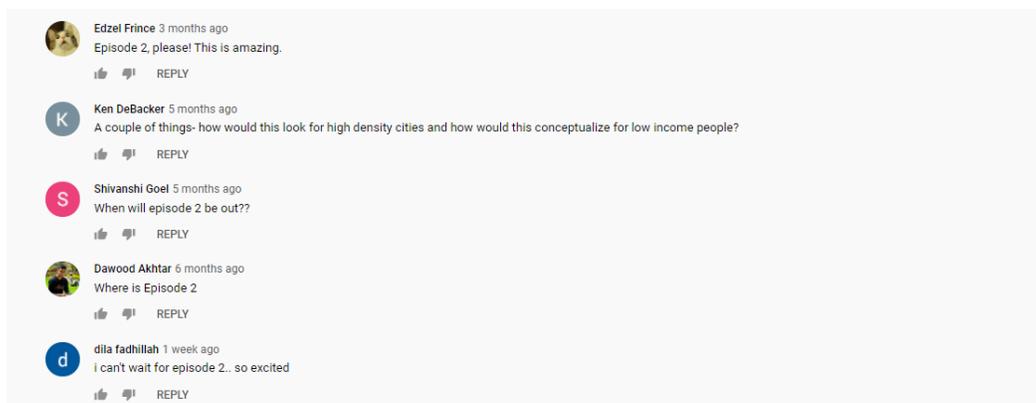


Figure 40. Screenshot of comments of the “Documentary: Pandemic Architecture EP.1 - Design Concepts | What can architecture do for our health?” YouTube video (author).

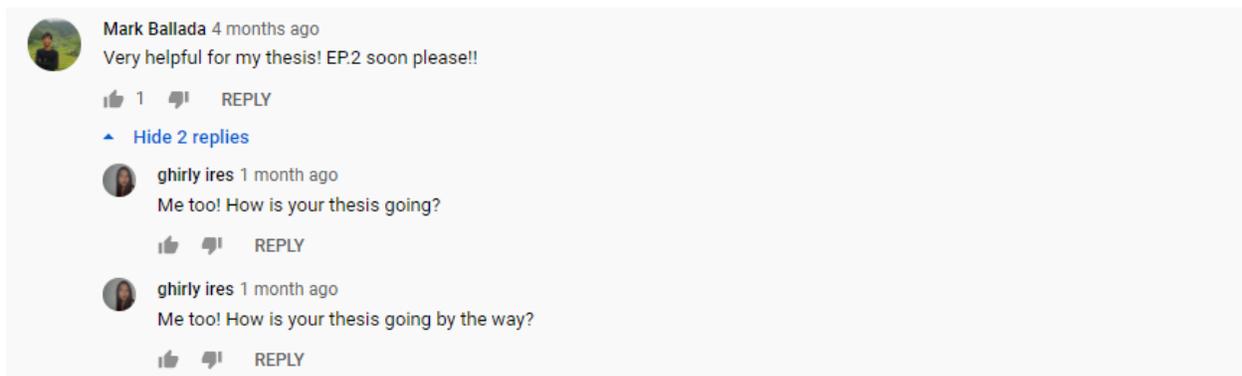


Figure 41. Screenshot of comments of the “Documentary: Pandemic Architecture EP.1 - Design Concepts | What can architecture do for our health?” YouTube video (author).

### 3) Pandemic Resistant House Design | ArkiTALK (English).

#### Story:

The speaker in this video uploaded in June 2020, is Karlo Marko. He is an architect proposing some architectural adjustments to make our houses more or less pandemic resistant (Karlo Marko, 2020).

#### Discourse:

In this video, some measures designers and architects can consider to reduce the spread of viruses in our residential houses. Post pandemic architectural adjustments to residential projects according to the speaker are as follows: parking slot inside the property, reversed window awning turned into a ledge for delivery, washbasin at the entrance with a foyer to remove shoes, and a coat rack to hang outdoor clothes, kitchen should be next to the entrance to drop off the groceries and clean them directly. Also, cross ventilation and movable partitions are a must and an outdoor garden if possible. These ideas look very simple yet

very useful to prevent the spread of viruses, therefore architects should keep them in mind (Karlo Marko, 2020).

#### Characters:

The video is addressed to architects and designers to consider some simple changes in the design of residential houses that could keep residents safe from any virus.

#### Elements catching the attention of the audience:

The “Pandemic Resistant House Design” title of the video is the first element that catches the attention of the user, additionally, while watching the video, the sound effects and the photos explaining the concepts makes the message easier to understand and more interesting.

#### The role of the audience:

This video has 20,050 views and 137 comments, which shows the high interaction with the video where people are not only watching but some of them are also sharing their opinions. In figure 42, users are happy with the content of the video and they like how the design is still simple and can be used for a long time.

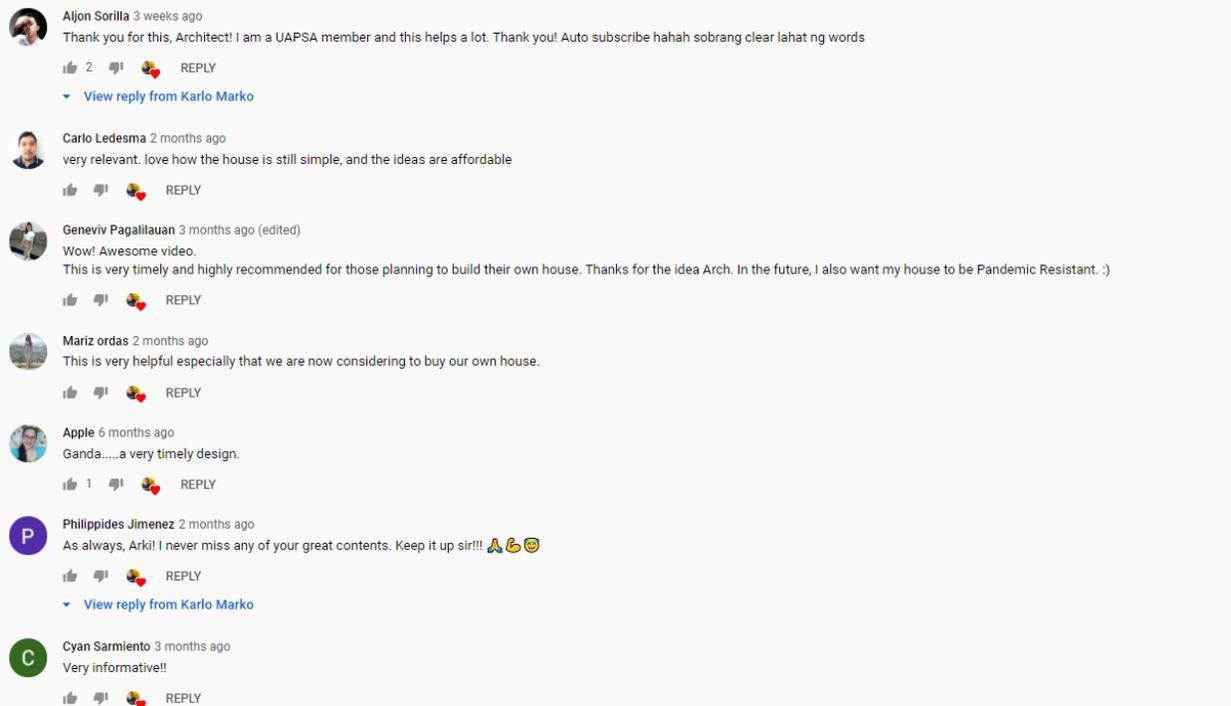


Figure 42. Screenshot of comments of the “Pandemic Resistant House Design | ArkiTALK (English)” YouTube video (author).

#### 4) How Architects are helping fight Corona virus.

##### Story:

This video was uploaded in March 2020, the speaker is unknown but the information he presents has reference to the chief architect of studio ardete in India, Badrinath Kaleru. The video shows how architects around the world help in reducing the spread of the covid-19 virus (BlessedArch, 2020).

##### Discourse:

This video presents three ways to help architects and designers to fight the pandemic. The first is to convert buildings and large spaces to hospitals, because of the lack of infrastructure

buildings or stadiums are converted into intensive care units which calls for architects to quickly help in designing those spaces. The second is to develop temporary intensive care units that can be quickly installed like inflatable units or shipping containers easy to install and scale-up. And the third is the face shields design for front line warriors using 3D printing (BlessedArch, 2020).

#### Characters:

The video is addressed to architects and designers to consider some ways to participate in fighting the pandemic.

#### Elements catching the attention of the audience:

The title of the video but also the video's cover photo is the famous architect Bjarke Ingels that doesn't appear at all in the video. These elements catch the attention of the audience.

#### The role of the audience:

This video has 10,807 views and 29 comments, which show the interaction of the audience with the video where people are not only watching but some of them are also sharing their opinions. In figure 43, there is a discussion between a user and the channel or the speaker.

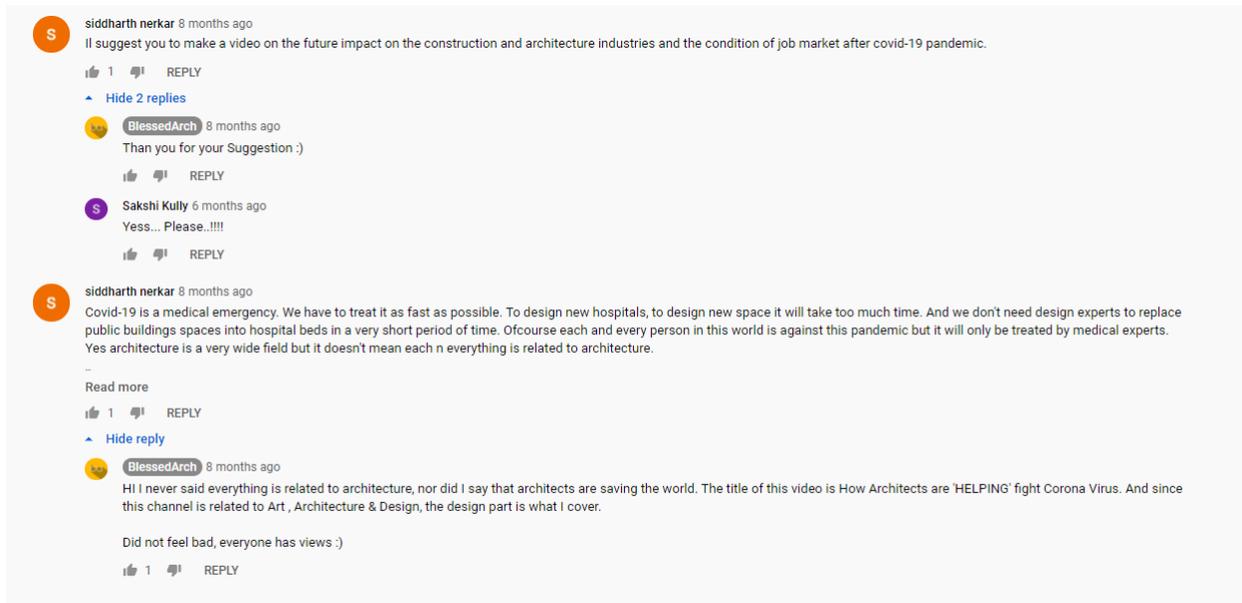


Figure 43. Screenshot of comments of the “How Architects are helping fight Corona virus” YouTube video (author).

## 5) How will Covid-19 impact architects and interior designers?

### Story:

This video uploaded in April 2020, has Ash Parekh as a speaker. Parekh is the principal architect at The Opus Design Studio and the chief mentor at the Foundation for architectural career enhancement, he discusses how architects and interior designers were affected by the pandemic (Architect and interiors India, 2020).

### Discourse:

The speaker in the video shed the light on how architects were affected; projects were delayed, works in construction sites were stopped because of the lockdown, clients are asking for modification in response to the new concept preventing the spread of the virus. Also to stay updated architects should participate on community platforms, networking

sites, and educational webinars and they should learn to use the technology to connect with the clients and other architects (Architect and interiors India, 2020).

### Characters:

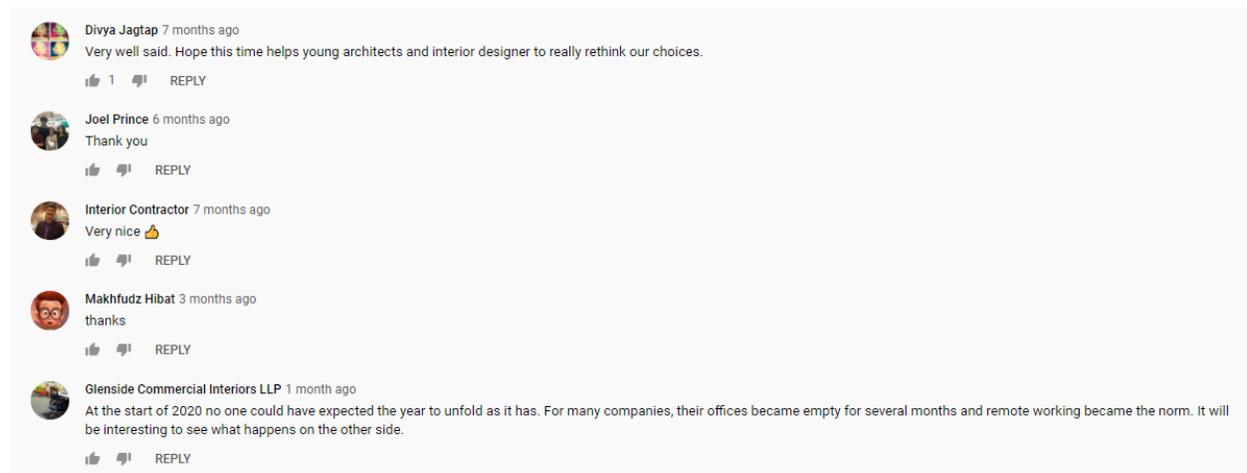
The video is addressed to architects and designers to stay updated during the pandemic.

### Elements catching the attention of the audience:

The title of the video but also the music in the background catch the attention of the audience.

### The role of the audience:

This video has only 3,066 views and 5 comments, which shows that there is a shy interaction with the video. In figure 44, users are thanking the channel for the video.



*Figure 44. Screenshot of comments of the “How will Covid-19 impact architects and interior designers?” YouTube video (author).*

### **4.3.3. Virtual reality 360 Travel**

1) Paris 360° Experience | Escape Now.

#### Story:

This video uploaded in June 2017, has no speaker, but the video itself is very important because it shows Paris, the capital of France, in a 360-degree video, focusing on its main landmarks and architectural monuments (Captivision, 2017).

#### Discourse:

This video is important because it shows the city of Paris and its famous architectural monuments from different angles. It shows some aerial views of the city streets and buildings, it also shows a human point of view of architectural monuments like the tower Eiffel, the Louvre museum, the Centre Pompidou, the palace of Versailles, the Notre Dame cathedral, the Sacre Coeur basilica, etc.. it also shows rivers, canals, gardens, and landscape. But what distinguishes this video, is the capacity of the user to turn around in every direction around him. It is more like a virtual reality video, where users at home can discover new cities, without really traveling, it is more like virtual traveling. This video is very functional and practical especially during the covid-19 pandemic, since because of the lockdown, flights were grounded (Captivision, 2017).

#### Characters:

This video is addressed to users interested in Paris city and architecture, it is also addressed to users under lockdown, isolated to discover new cities around the world, mainly for architects isolated and not able to travel and discover the different types of architecture around the world.



## 2) London 360° Experience | Escape Now.

### Story:

This video uploaded in June 2017, has no speaker, but the video itself is very important because it shows London city, the capital of England, in a 360-degree video, focusing on its main landmarks and architectural monuments (Captivision, 2017).

### Discourse:

This video is important because it shows London city and its famous architectural monuments from different angles. It shows the city's main attractions for example the London eye and historical architectural buildings like Big Ben, the Westminster Abbey, the Buckingham Palace, the Tower of London, it also shows some important bridges like the Westminster Bridge, the Tower Bridge, and the Millennium Bridge. Additionally, the video presents the river Thames and Hyde Park. This video is much more than a normal video, it is a visit to London and what distinguishes it, is the ability of the user to turn around in every direction around him. It is more like a virtual reality video, where users at home can discover new cities, without really traveling, it is more like virtual traveling. This video is very functional and practical especially during the covid-19 pandemic, since because of the lockdown, flights were grounded (Captivision, 2017).

### Characters:

This video is addressed to people interested in London city and architecture, it is also addressed to users under lockdown, isolated to discover new cities around the world, mainly for architects isolated and not able to travel and discover the different types of architecture around the world.

### Elements catching the attention of the audience:

Like previous videos, the title is important in catching the attention of the audience since it includes the “360” and the “escape” words. These words are captivating because this is considered more or less a new concept which leads to more user interaction.

### The role of the audience:

This video has 6,266,803 views and 2,592 comments which shows the high interaction of the audience with the video, some of them just watch but some others comment and participate in discussions presenting their opinions. In figure 46, users commenting were enjoying the experience as if they were really in London, especially during this quarantine.

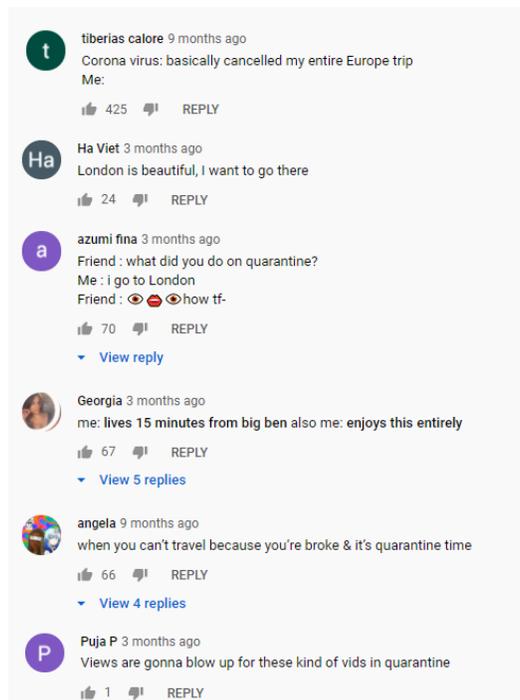


Figure 46. Screenshot of comments of the “London 360° Experience | Escape Now” YouTube video (author).

### 3) Versailles en 360°.

#### Story:

The video uploaded in December 2016, has no speaker but the visual content of the video is important without the need of a speaker because it shows the Versailles Palace design and architecture of the inside in detail (Galaxie presse, 2016).

#### Discourse:

The video is important because it shows the details of the design of some rooms in the Versailles Palace where viewers can stop the video and turn all-around to contemplate and admire each detail in the room; the tiling, the walls, the roof, the chandeliers, the furniture, the curtains. Each room in the palace is wonderful and majestic, the person watching can't get enough of admiring the charming interior architecture of this majestic place and what makes it more charming is the 360-degree angle helping the viewer to turn around as if he was really in the palace (Galaxie presse, 2016).

#### Characters:

This video is addressed to people interested in the architecture and design of Versailles Palace, it is also addressed to users under lockdown, isolated to discover Paris famous architecture, mainly for architects isolated and not able to travel and discover the different types of architecture around the world.

#### Elements catching the attention of the audience:

The title of the video including the "360" word is important in catching the attention of the audience. The 360-degree idea is captivating because this is considered more or less a new concept which leads to more user interaction.

### The role of the audience:

This video has 58,151 views and 26 comments which shows the interaction of the audience with the video, some of them just watch but some others comment and participate in discussions presenting their opinions. In figure 47, the first user enjoyed the video and discovered the Palace because of it and the second user said that he is too broke to go there which means that the video was a way for him to go there and discover the palace.



*Figure 47. Screenshot of comments of the “Versailles en 360” YouTube video (author).*

#### 4) A London City Guided Tour - 360 VR Video.

##### Story:

This video uploaded in March 2017, has a speaker called Peter that will show the watchers all of the great hotspots and attractions in London. This video differs from the previous one of London because it has a speaker that will share some information about the landmarks (VR Gorilla, 2017).

##### Discourse:

This video is important because it is like a trip with a guide, Peter. It shows the top landmarks of London like Big Ben; one of the most well-known tower clocks in the world, Westminster Abbey: a 1000-year-old church used for famous and royal weddings, the Trafalgar square

surrounded by museums and cultural hotspots. Additionally, Peter in the video used the metro as the best transportation to use in London, he said. Also, the video shows the Tower bridge the most famous bridge in London, and also the Tower Bridge, one of the oldest buildings in London used through the years as a fortress, a palace, and a prison. The next stop was at the Buckingham Palace, home of the royal family that include 600 rooms with a police station and a post office. To end the trip Peter took the viewers to the Solo district known for its risqué attractions and also it is the district in which Chinatown is located (VR Gorilla, 2017).

#### Characters:

This video is addressed to people interested in London city and architecture, it is also addressed to users under lockdown, isolated to discover new cities around the world, mainly for architects isolated and not able to travel and discover the different types of architecture around the world.

#### Elements catching the attention of the audience:

Like previous videos, the title is important in catching the attention of the audience since it includes the “360” word that is captivating because it is considered more or less a new concept which leads to more user interaction. Additionally, while watching the video it feels like the user is on a trip with a guide explaining to him the main information of each landmark.

#### The role of the audience:

This video has 1,160,597 views and 230 comments which shows the interaction of the audience with the video, some of them just watch but some others comment and participate in discussions presenting their opinions. In figure 48, users commenting were enjoying the experience as if they were really in London, especially during this quarantine.

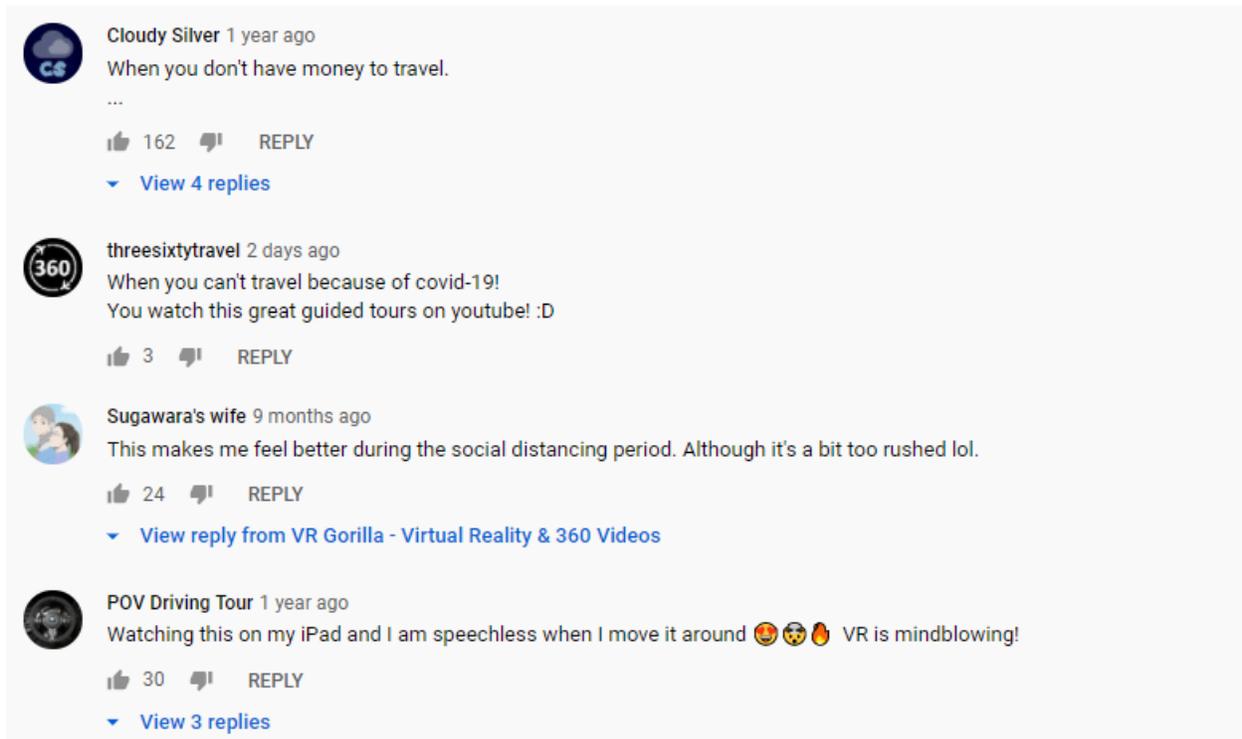


Figure 48. Screenshot of comments of the “A London City Guided Tour - 360 VR Video” YouTube video (author).

## 5) Florence & Rome 360° Experience | Escape Now.

### Story:

The speaker in this video uploaded in August 2019 is Tarek Mohamed who isn't visible but we can listen to his voice explaining some general information about the landmarks of Florence and Rome (Captivision, 2019).

### Discourse:

This video is important because it takes the watchers on a 360 degree trip to Florence and Rome. Florence the birthplace of the renaissance of intricate architecture and wonderful arts. The video shows the main attractions in Florence like the medieval cathedral of Santa Maria del Fiore known for its red-brick dome which is one of the largest in the world, the

Palazzo Vecchio, the Uffizi gallery the Ponte Vecchio, and also it shows the building's architecture with the narrow passages. The video then takes the viewer to Rome the city of 2000 historical years, where it shows the colosseum, the roman forum, and other preserved monuments like the arch of Titus also the pantheon with the largest dome, perfectly proportioned from top to ground (Captivision, 2019).

#### Characters:

This video is addressed to people interested in Italy especially Rome and Florence cities and architecture, it is also addressed to users under lockdown, isolated to discover new cities around the world, mainly for architects isolated and not able to travel and discover the different types of architecture around the world.

#### Elements catching the attention of the audience:

Like previous videos, the title is important in catching the attention of the audience since it includes the “360” word that is captivating since it is considered more or less a new concept which leads to more user interaction. Additionally, while watching the video it feels like the user is on a trip with a guide explaining to him the main information of each landmark.

#### The role of the audience:

This video has 50,275 views and 68 comments which shows the interaction of the audience with the video, some of them just watch but some others comment and participate in discussions presenting their opinions. In figure 49, users commenting were enjoying the experience and asking for other similar videos in other cities.

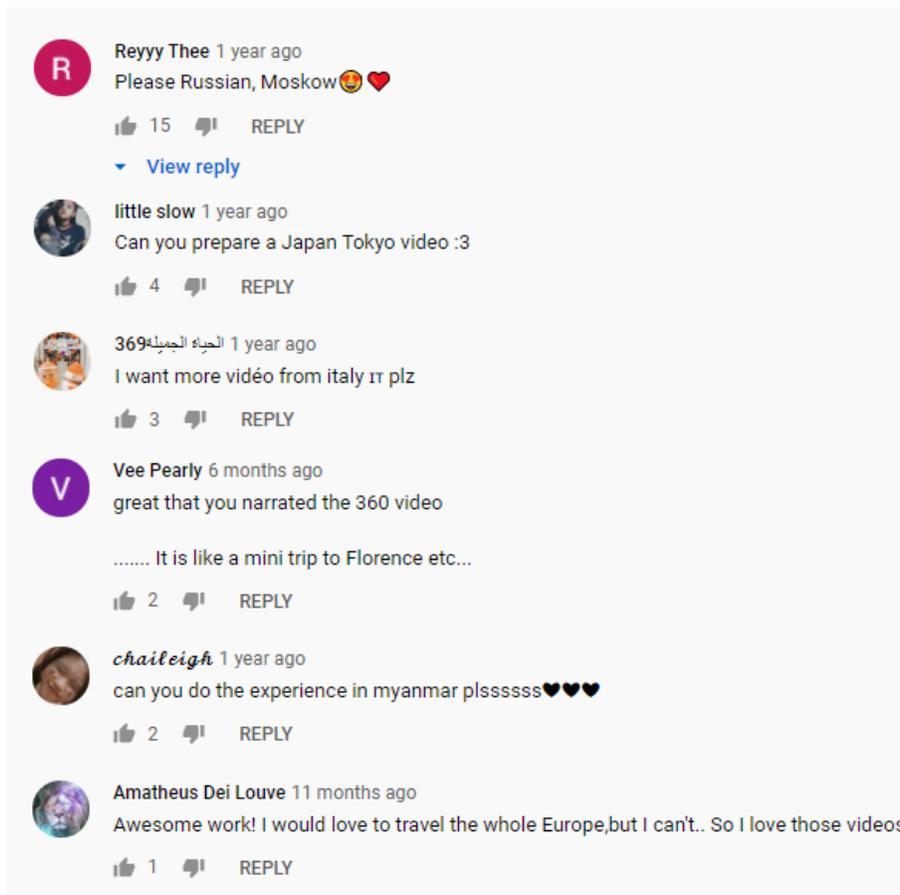


Figure 49. Screenshot of comments of the “Florence & Rome 360° Experience | Escape Now” YouTube video (author).

#### 4.4. Summary

Following the storytelling methodology, in this chapter 5 steps for each video were the guide of the work. First finding the main story of the video, second presenting briefly the discourse of the video, third showing the main characters or the audience of the video, fourth discussing the elements catching the attention of the audience and fifth presenting the role of the audience by showing some comments and interaction on each video. In this way, the results of each video of each category and sub-category were presented alone, and the results show that YouTube videos are really important in communicating urban Architecture and in engaging users during covid-19 which will be discussed deeply in the next chapter.

## **5. DISCUSSION**

### **5.1. Overview**

This chapter will be discussing the thesis findings and results from the previous chapter's analysis. It will discuss how the YouTube videos chosen and analyzed following the storytelling methodology help in achieving the objectives of the study. The discussion will be divided into verified channels and unverified channels where the 5 basics of the storytelling will be discussed briefly. Then, the two categories will be compared together to find out what is the main difference and if the YouTube goal of communicating urban and architectural information and engaging users is achieved anyway in both of them.

### **5.2. Verified Channels' Videos**

In this category, 15 videos were chosen from YouTube channels that are verified, well known, and that have a large number of subscribers.

In the first sub-category of "Covid-19 and the City" 5 videos were presented; these videos were important in communicating urban knowledge and in engaging users during covid-19 since they were uploaded in 2020. The focus of the videos was on the city, on the current situation of the city, how it is becoming empty with quiet streets and closed stores as if it is a ghost town, and also on the future of the city; how it will become post-covid-19.

The stories of the videos might be different some of them have speakers some of them do not, but the importance of the videos is the same because when there is no speaker the visual content itself is enough to transfer the message clearly to the audience.

The message or the discourse of the videos are presenting the impact of covid-19 on the cities, even the busiest cities like New York City became empty. All the cities shown in the videos are empty; closed shops, empty public areas, no passing cars, no pedestrians because people are isolating themselves to prevent the spread of the virus. The videos are also

presenting some ideas for cities post-covid-19, big adjustments in cities are necessary to reduce the probability of the virus transmission and to be ready for future pandemics. It is important to have social distancing in the city and its streets and shops, therefore reducing the density is the answer by applying the following concepts of remote working, online shopping, wider pedestrians sidewalks, reducing the public transportation and deep cleaning of this latter, more bike lanes, use of scooter and skateboards and most importantly the 15 minutes city concept where everything needed is a short walk of home. It is important to mention that all of these precautions and concepts were already discussed in the literature review, so the videos here are transferring the same information in a visual way which is more catching to the audience.

The characters or the audience of these videos are everyone interested in the cities, and mainly architects and urban planners responsible for the city design to stay updated to what's happening in cities all around the world to be able to design safer and better cities.

In the second sub-category of "Covid-19 and architecture" 5 videos were presented; these videos were important in communicating architectural knowledge and in engaging users during covid-19 since they were uploaded in 2020. The focus of the videos was on the architecture and construction, during covid-19 and how post covid-19 pandemic buildings design should be.

The stories of the videos might be different some of them have speakers some of them do not, but the importance of the videos is the same because when there is no speaker the visual content itself is enough to transfer the message clearly to the audience.

The message or the discourse of the videos are presenting new ways to design spaces for architects and designers, for instance, the relationship between architecture and natural or green spaces is important especially for quarantine. Additionally, the outdoor corridor, the cross ventilation, the flexible designs for movable walls and adjustable spaces, the use of technology for touchless tools and online shopping, the transparent shields, etc, are a must in the new designs of spaces and buildings post covid-19. Also, the videos have shown the construction process of the coronavirus hospital in China that took 10 days to be built, it is

an example of urgent and fast constructions during the covid-19 pandemic, it should be done on an appropriate land far and easily accessed and the trick that makes it less expensive and fastly constructed is the use of prefabricated elements for the building itself. This information was also discussed in the literature review which makes the videos more accurate and more interactive than papers and articles.

The characters or the audience of these videos are everyone interested in architecture and construction, mostly architects and designers responsible for spaces and buildings design and construction to stay updated to new and safe spaces and building design concepts.

In the third sub-category of “Virtual reality 360 Travel” 5 videos were presented; these videos were important in not only showing cities from different angles but also in engaging users by the 360-degree concept where the user feels like a real tourist in a new city. The 360-degree video concept is not new, videos are not newly uploaded but this type of video captivated a huge number of users during the covid-19 pandemic since people were isolated and unable to travel or to go out.

The stories of the videos might be different some of them have speakers some of them do not, but the importance of the videos is the same because when there is no speaker the visual content itself is enough for the user to discover and turn around in cities and palaces.

The message or the discourse of the videos are mainly the same but in different spaces and cities. The videos show the main landmarks and attractions in some cities like Saint Petersburg in Russia, Shanghai in China, New York City in the USA where the user can move around and turn 360 degrees to discover the spaces and the surrounding. The videos also show some important architectural monuments like Buckingham Palace in London and the Bolshoi Theatre in Moscow where users can pause the video and admire the interior design of each room, the tiling, the walls, the curtains, the furniture, the chandeliers, etc. It is a very unique experience, it is more like being a tourist from home, this is what is called virtual reality or virtual traveling. As discussed in the literature review, the 360-degree videos increase the interaction this is what makes YouTube not only a platform to share videos but it is also a platform of participation especially during this covid-19 pandemic.

The characters or the audience of these videos are every person in need of an escape, of an exploration of a new city, and every person curious to know and visit architectural palaces and monuments from inside like architects and designers.

What was obvious is that the elements catching the attention of the audience, are similar for all the videos of the three sub-categories. Those elements are mainly the first thing the user sees, which is the titles. The title of the video plays a very important role in catching the attention of the users, also the video itself is important in captivating the audience's attention, its length, its visual content, its audio are responsible for keeping the watcher interested until the very last second of the video.

Additionally, audience interaction is very important in all the videos because as mentioned in the literature review, YouTube is not only a platform to share information but it also allows the interaction, participation, and engagement of the users. This interaction was very important, especially during the covid-19 pandemic. Some of the users just watch and some of them watch and comment. What is remarkable at the verified channels is the large number of viewers and commenters but not always. Therefore, the fact of having them is important because this shows that some people gave time to watch and/or interact with the video which is the participation goal of YouTube. The comments section is not always about the topic of the video, some comments criticize the video's settings like the audio, the quality but mainly people react and share their opinion on the topic itself.

In the first sub-category, people were sad about the idea of seeing the cities empty, some others find it hard to go back to the new normal, some find the positive points of these changes yet some find it depressing, some discussions between users is seen as well. In the second sub-category, people were sharing some new design solutions, some others were showing they disagree with the designs and their high costs, and a lot of users were appreciating the Chinese government for their effort in the construction industry. In the third sub-category, even though videos were uploaded before covid-19, comments showed that people felt like tourists while under quarantine adding that it is an amazing virtual travel on a budget, especially during the covid-19 pandemic.

### **5.3. Unverified Channels' Videos**

In this category, 15 videos were chosen from YouTube channels that are unverified, not very well known, and with not a very large number of subscribers compared to the previous 15 videos from verified channels.

In the first sub-category of "Covid-19 and the City" 5 videos were presented; these videos similar to the videos of the first category were important in communicating urban knowledge and in engaging users during covid-19 since they were uploaded in 2020. Additionally, their focus is the same, it is on the city, on its current situation, and also on its future situation; post-covid-19.

The stories of the videos might be different some of them have speakers some of them do not, but the importance of the videos is the same because when there is no speaker the visual content itself is enough to transfer the message clearly to the audience.

The message or the discourse of the videos are presenting the impact of covid-19 on the cities. One of the video shows Warsaw, the capital of Poland, despite its large population the city is empty and closed. This is not only the case of Warsaw, it is the case of most of the cities all around the world, where there are no cars, no pedestrians, closed shops, cities are silent and similar to abandoned cities because of the lockdown. Social distancing is important to prevent the covid-19 in the cities, from this point the videos in this category are also showing how cities should be designed to reduce the transmission by having more public parks where people can spread easily, reducing the complexity and the interdependence of the city, applying the open streets concepts where only emergency cars are allowed to pass, widening pedestrians sidewalks, adding bike lanes, etc. It is important to mention that all of these concepts were already discussed in the literature review, so the videos here are transferring the same information in a visual way that is more catching to the audience.

The characters or the audience of these videos are everyone interested in the cities, and mainly architects and urban planners responsible for the city design to stay updated to what's happening in cities all around the world to be able to design safer and better cities.

In the second sub-category of “Covid-19 and architecture” 5 videos were presented; these videos were important in communicating architectural knowledge and in engaging users during covid-19 since they were uploaded in 2020. The focus of these videos is the same as the ones in the verified category, it is on the architecture and construction, during covid-19 and how post covid-19 pandemic buildings design should be.

The stories of the videos might be different some of them have speakers some of them do not, but the importance of the videos is the same because when there is no speaker the visual content itself is enough to transfer the message clearly to the audience.

The message or the discourse of the videos are presenting new ways to design spaces for architects and designers. Many concepts and features were presented in these videos with a main center point: social distancing. To apply it, the videos have presented many design solutions like having isolation zones, reducing path crossing, having flexibility in design, green ratios, changes in places of functions like having washbasin next to the entrance, using prefabricated materials and touchless design, having an outdoor garden if possible, having cross-ventilation and movable partitions. Additionally, videos show that architects can help in converting some buildings or sports stadiums to hospitals, and in developing temporary intensive care units easy to install and scale-up. These ideas and concepts were also discussed in the literature review which makes the videos more accurate and more interactive than papers and articles.

The characters or the audience of these videos are everyone interested in architecture and interior spaces design, mostly architects and designers responsible for spaces and buildings design to stay updated to new and safe spaces and building design concepts.

In the third sub-category of “Virtual reality 360 Travel” 5 videos were presented; these videos as in the verified channels were important not only in showing cities from different angles but also in engaging users by the 360-degree concept where the user feels like a real tourist in a new city. The 360-degree video concept is not new, videos are not newly

uploaded but this type of video captivated a huge number of users during the covid-19 pandemic since people were isolated and unable to travel or to go out.

The stories of the videos might be different some of them have speakers some of them do not, but the importance of the videos is the same because when there is no speaker the visual content itself is enough for the user to discover and turn around in cities and palaces.

The message or the discourse of the videos are mainly the same but in different spaces and cities. The videos show the main landmarks and attractions in some cities like Paris in France, London in UK, Florence, and Rome in Italy where the user can move around and turn 360 degrees to discover the spaces and the surrounding. The videos also show some important architectural monuments like the Palace of Versailles in Paris where users can pause the video and admire the interior design and the charming design of each room, the tiling, the walls, the curtains, the furniture, the chandeliers, etc. It is a very unique experience, it is more like being a tourist from home, this is what is called virtual reality or virtual traveling. As discussed in the literature review, the 360-degree videos increase the interaction this is what makes YouTube not only a platform to share videos but it is also a platform of participation especially during this covid-19 pandemic.

The characters or the audience of these videos are every person in need of an escape, of an exploration of a new city, and every person curious to know and visit architectural palaces and monuments from inside like architects and designers.

What was obvious is that the elements catching the attention of the audience, are similar to the ones of the videos in the first category and for all the videos of the three sub-categories. Those elements are mainly the first thing the user sees, which is the titles. The title of the video plays a very important role in catching the attention of the users, also the video itself is important in captivating the audience's attention, its length, its visual content, its audio are responsible for keeping the watcher interested until the very last second of the video.

Additionally, audience interaction is very important in all the videos because as mentioned in the literature review, YouTube is not only a platform to share information but it also

allows the interaction, participation, and engagement of the users. This interaction was very important, especially during the covid-19 pandemic. As discussed in the first category of verified channels, for this category of unverified channels also, some of the users just watch and some of them watch and comment but mainly the number of viewers and commenters in this category is not so large, it depends on the video. Yet the fact of having this participation even if it is not too large, shows that some people gave time to watch and/or interact with the video which is the participation goal of YouTube. The comments section is not always about the topic of the video, some comments criticize the video's settings like the audio, the quality but mainly people react and share their opinion on the topic itself.

In the first sub-category, people commenting consider this covid-19 is a political game that will end soon so no need for future cities design some others were happy with these solutions that were ignored before. In the second sub-category, comments were about the new design concepts, some think that the videos were helpful, some were adding other solutions and some others were against the new designs. In the third sub-category, even though videos were uploaded before covid-19, a lot of comments consider these videos as traveling from home because corona has canceled their trips, some others are happy with these videos because they are broke and can't travel anyway because of the quarantine.

#### **5.4. Comparison between the channels**

After discussing each category alone, it was obvious that both of them are very similar; both of them in each sub-category are sharing videos with more or less the same information that was also discussed in the literature review at the beginning of the study.

The main difference between the two categories is that the verified one has more subscribers than the unverified one, therefore more viewers and commenters. But this is not always true because some videos from the unverified channels have also a large number of viewers and commenters. Users can trust verified channels more since they are verified, so they consider the videos they share and their information more accurate, but the discussion of each category alone has proved that both of them were sharing accurate information similar to

the literature review. From this point, chosen YouTube videos, were all able to communicate correct information related to the city and architecture and were also able to create an interaction with the audience especially during the covid-19 pandemic.

## **5.5. Results and Thesis Objectives**

From all that was previously discussed, the thesis hypothesis of YouTube communicating urban and architectural information and engaging users during covid-19 pandemic is very well confirmed. The 30 videos, from verified or from unverified channels, were sharing important information related to the city during covid-19 and post covid-19, also architectural information about the new design and concepts in buildings and spaces that prevent the spread of covid-19 virus and that prepare the spaces for a better and healthier future and finally they were able to make people discover new cities, new buildings and new designs by the 360 degrees videos all around the world by sitting at home. This confirms again the main objective of this study.

It is important to mention that some videos didn't have any speaker but were very important and necessary to share the message and information. Additionally, the information presented in the videos was already discussed in the literature review which makes the YouTube platform an important source of accurate information for architects, designers, and urban planners. The information presented is easily transferred interactively and interestingly not only by readings papers and articles.

The following research questions asked at the beginning of this study now can be easily answered after all the work, the storytelling analysis that presented the results of the videos objectively, and then the discussion. The following answers are a brief summary of what was discovered in this study.

- How does YouTube communicate urban and architectural information during the covid-19 pandemic?

By sharing videos with accurate information similar to the information found in the literature review about solutions to prevent the spread of the virus by showing how cities around the world are facing covid-19 and what are the new design concepts to apply in cities and buildings and living spaces post-covid-19.

- How does YouTube allow the participation and the interaction of users in these topics?

By allowing the users to like, view, and comment on the videos watched. The comments have shown that YouTube is much more than a sharing platform but it is also a participatory platform where people can share their opinion freely and discuss video topics.

- How does YouTube offer the chance of virtual traveling?

By offering 360-degree videos, that allow users to discover his surrounding by turning around and using the different angles available in the video. Users can stop the video and admire new cities and monumental buildings in detail while sitting at home and with zero costs.

## **6. CONCLUSION**

### **6.1. Overview**

This chapter summarizes the thesis, offering also a call for future actions and research studies, where readers will be aware of what areas of this thesis topic need more research.

### **6.2. Conclusion**

This study fills in a research gap mentioned at the beginning about the relationship between architecture and YouTube platform, by presenting a sample of 30 videos from YouTube platform that communicates urban and architectural information and that allow the interaction of the users and by analyzing the results and discussing them. This study has shown how YouTube is not only a sharing platform, but it is much more than that, it is a platform that architects can use to discover and to increase their knowledges not only by watching videos but also by the participation offered by the YouTube platform; by commenting and by watching the 360 degrees videos. Therefore the gap in connection between YouTube and Architecture especially during this covid-19 pandemic was filled in. In the beginning, a literature review was a must to discover and study the topics of architecture and urban design during pandemics and the importance of YouTube to be able to compare them with the results at the end. YouTube videos were chosen according to a specific rationale and then they were divided into 2 categories, one of verified channels and one of unverified channels, in order to study the videos more in detail and to see if there is any difference between them. To study the videos and analyze them a qualitative methodology was chosen -since the topic is flexible with a small sample and with non-numerical data- and a storytelling design method was applied. This latter has 5 basic elements that were essential to show the result of each video objectively; the story, the discourse, the characters, the elements catching the attention of the audience, and the role of the audience. Based on these 5 elements, each video had shown its importance in a way, and it has pushed the audience to interact with it and with its content by commenting and

sharing their opinion related to the city and architecture and some out of topics comments. Additionally, the virtual traveling videos were the top in the interaction process, and of course, this is because of the 360-degree technique where the viewers can not but interact by the fact of watching them since it is based on angles that move 360 all around, as if the viewer is inside the video.

In the discussion part, each category was discussed alone, and the content of the videos was compared to the literature review and they were totally matching with what was presented in the literature review. The two categories were the same, and the one only different thing is the number of viewers which is normally higher for verified channels since they are “verified”, but the goal of architecture and interaction is reached in both categories even when some videos didn’t have any speaker but only interesting visual content.

This exercise can be helpful to identify the role of YouTube in architecture and the participation of users. Even though the research question was clearly answered in this study, the results are based on a small sample selected of only 30 videos, which means that this research cannot claim to be a comprehensive study, the data collected allow to draw some valid conclusions:

- YouTube platform plays a very important role in communicating architectural and urban information to the public and mainly architects, designers, and urban planners.
- YouTube platform plays an essential role in sharing information not only for every day but also in urgent cases like today’s covid-19 pandemic.
- YouTube platform allows the participation and interaction of users and architects by offering the comment section where discussions and opinions are shared.
- YouTube platform offers the chance of virtual traveling by the 360-degree video concept where users and architects can discover cities and monumental buildings all

around the world from home with zero cost, especially during covid-19 lockdown, which increase the participatory culture of this platform.

This paper presented an overview of what the YouTube platform is about, this study highlights the role of this platform for architects and urban planners, it outlines what some videos can present and share with the audience especially architects, and how these videos allow the interaction and the participation of their audiences.

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